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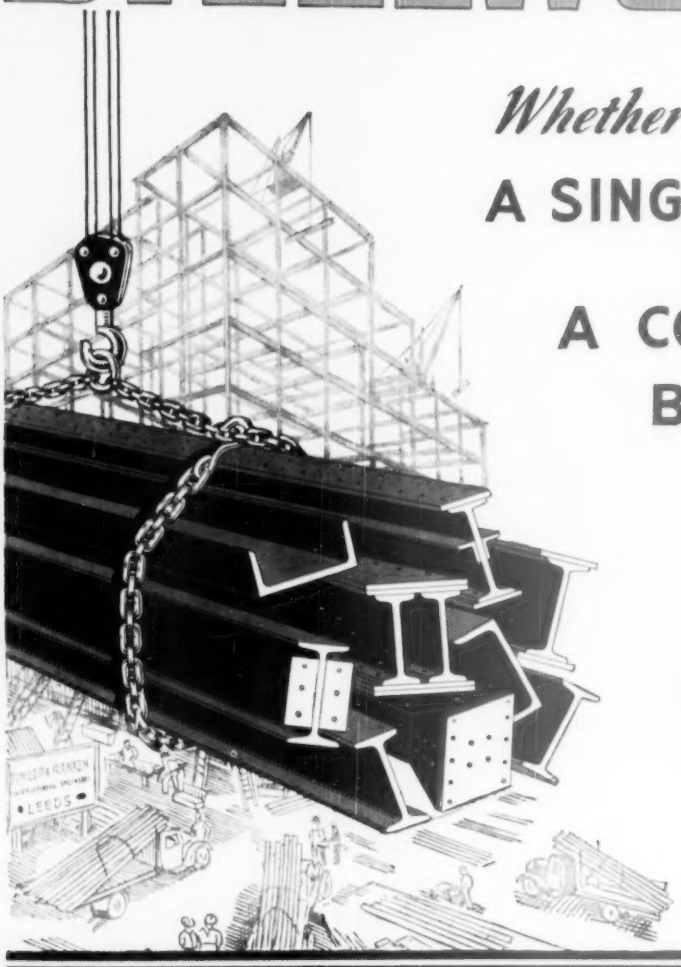

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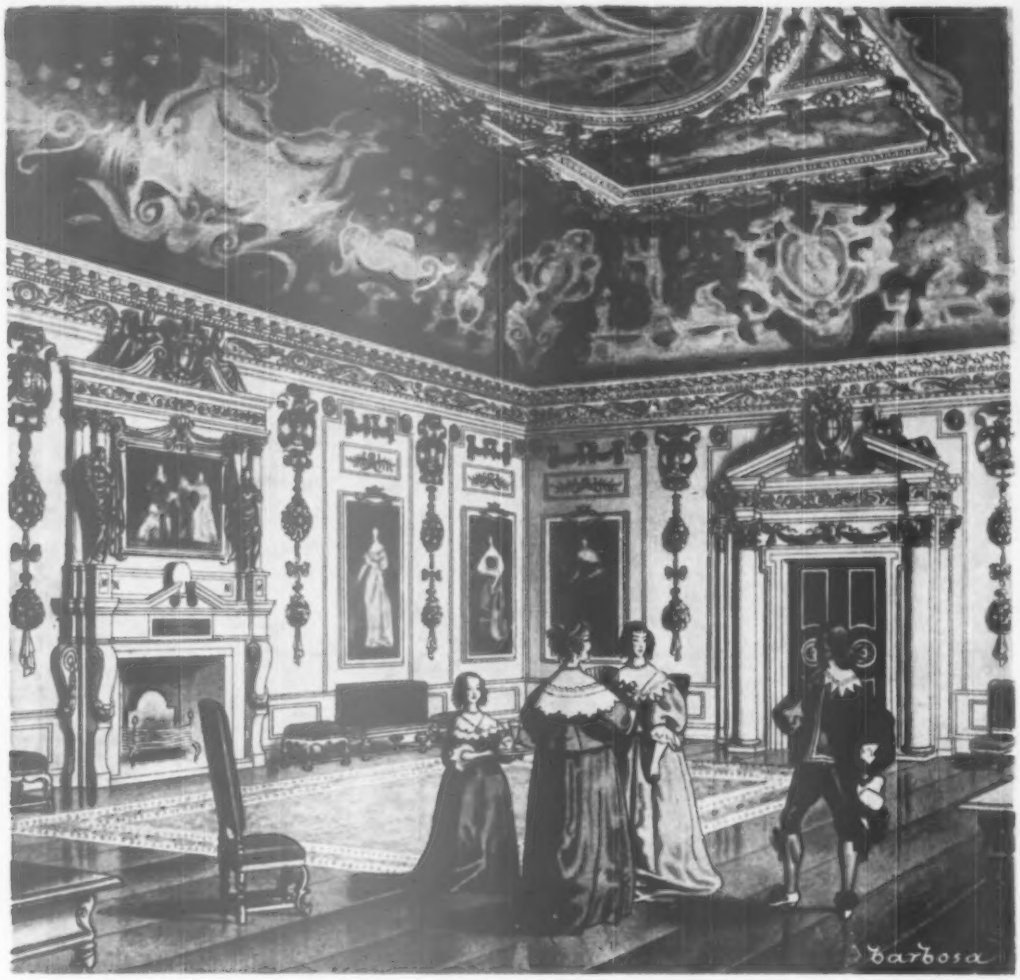

Classical Ancestry

The glories of the reign of Elizabeth appeared to have faded by the time that Charles I came to the throne. England had lost much of her prestige abroad, the popular drama was no more, and Melancholy had become both the spirit of the age and a fashionable complaint. The feudal order was dying. Architecture, too, was breaking away from its medieval ancestry. Inigo Jones had adopted the strict classical style of the Italian Renaissance and Palladio which was to oust the free and picturesque hybrid-Gothic of Elizabeth's reign. The "father of English architecture" was also its first "architect" in the modern sense. British builders today are fortunate to possess in Celotex a valuable material offering scope for further development of the forms which Inigo Jones helped to create.

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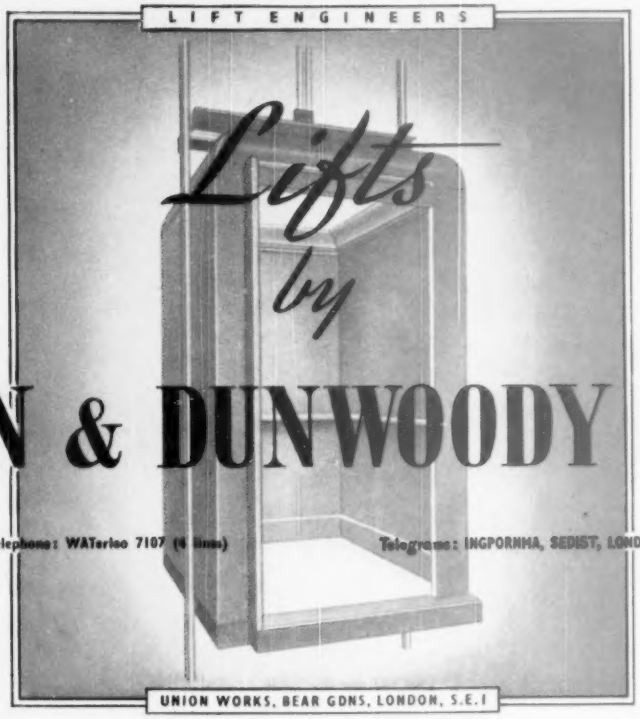

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Architects : J. Alfred Harper & Son

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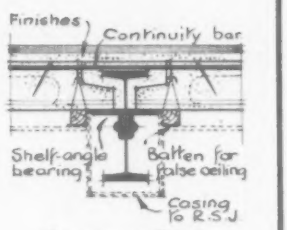
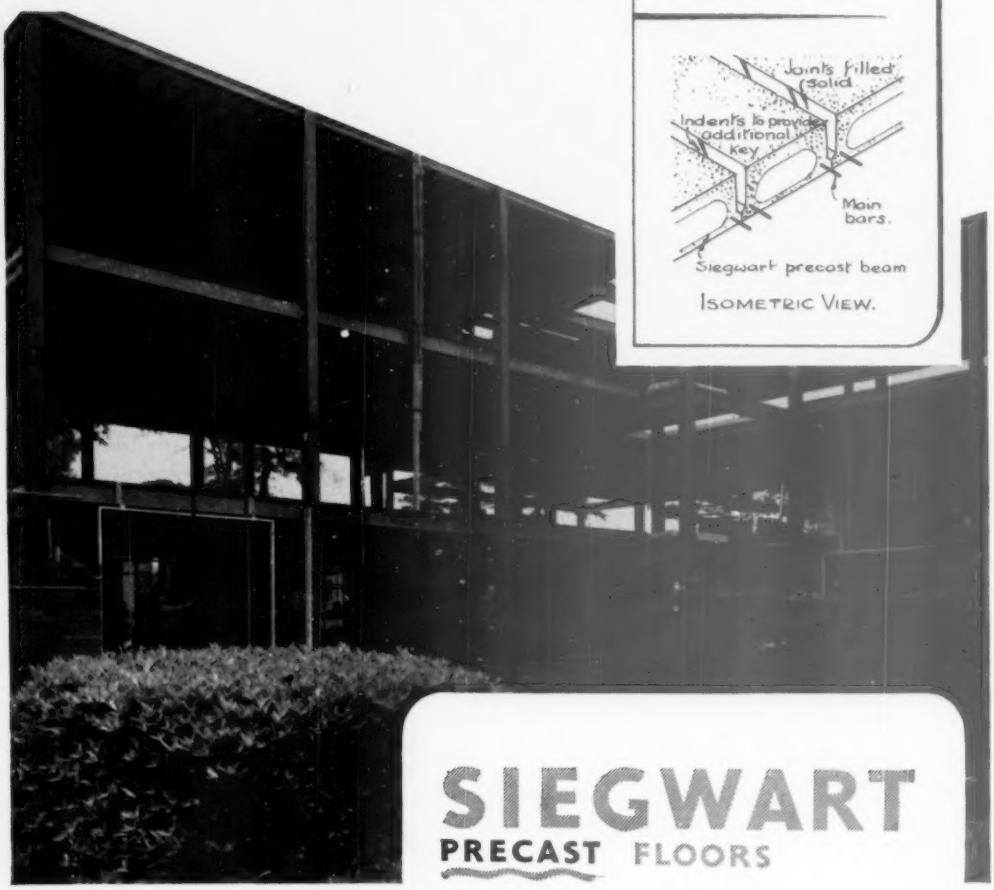


BEARING DETAIL.

ISOMETRIC VIEW.



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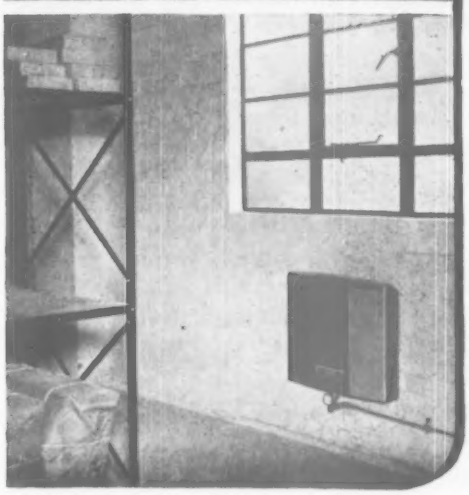

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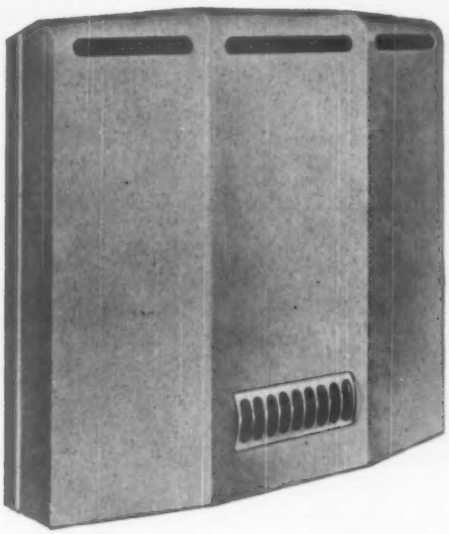

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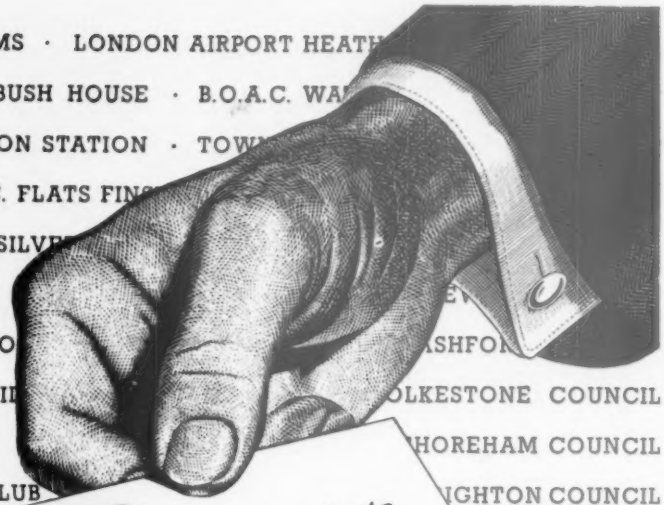

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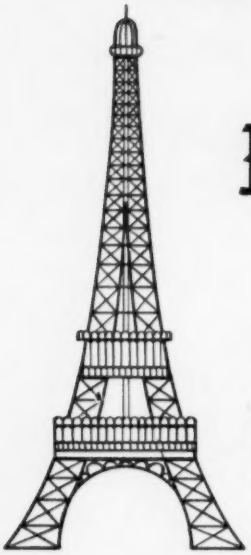

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This drawing was executed by John Reynolds of the Aluminex Division of Williams and Williams. It was decided to include it in the series "Window Makers at Work".

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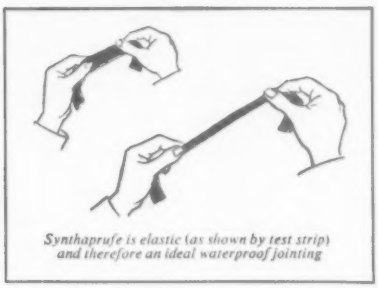

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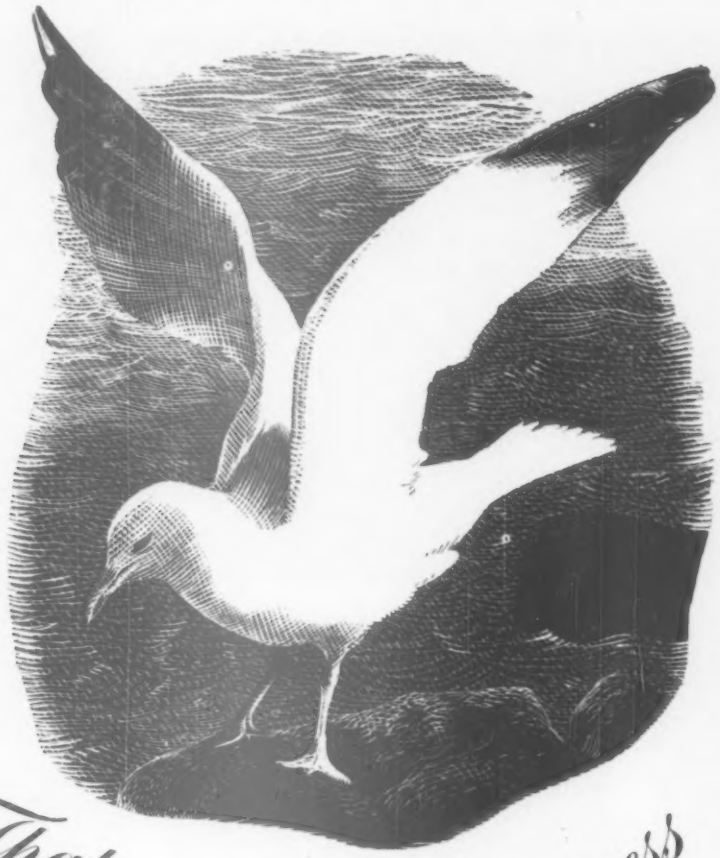

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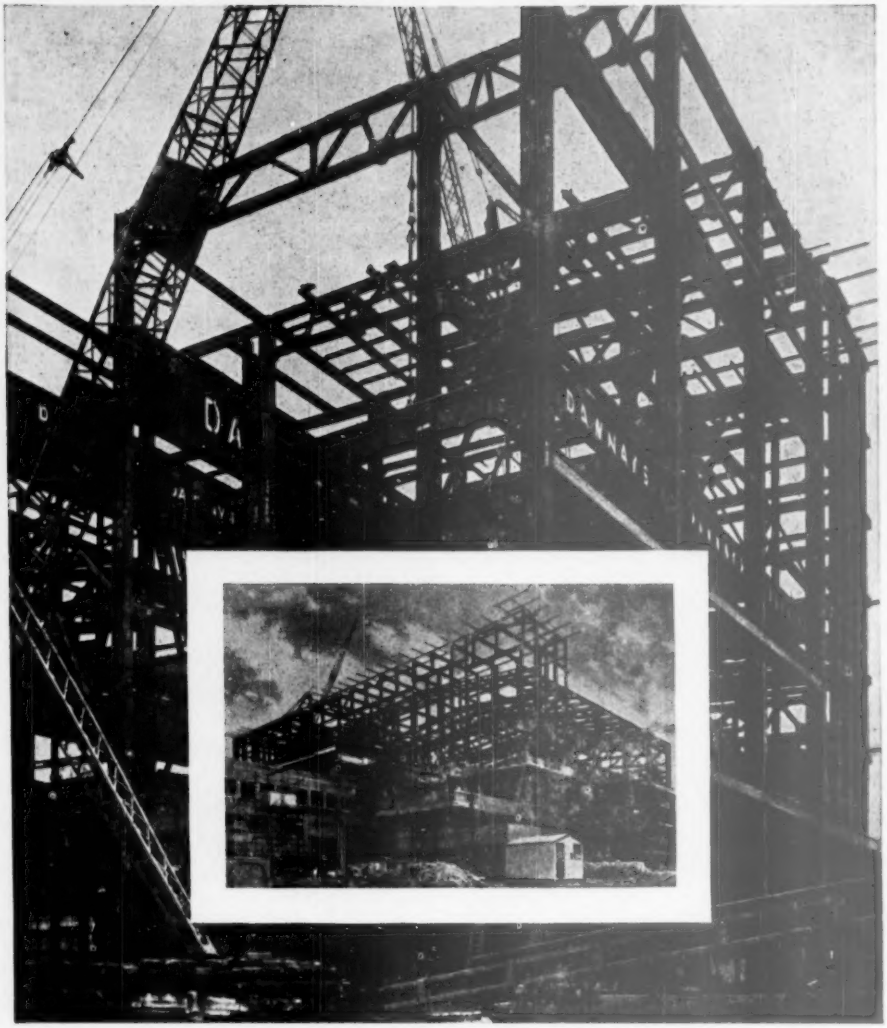

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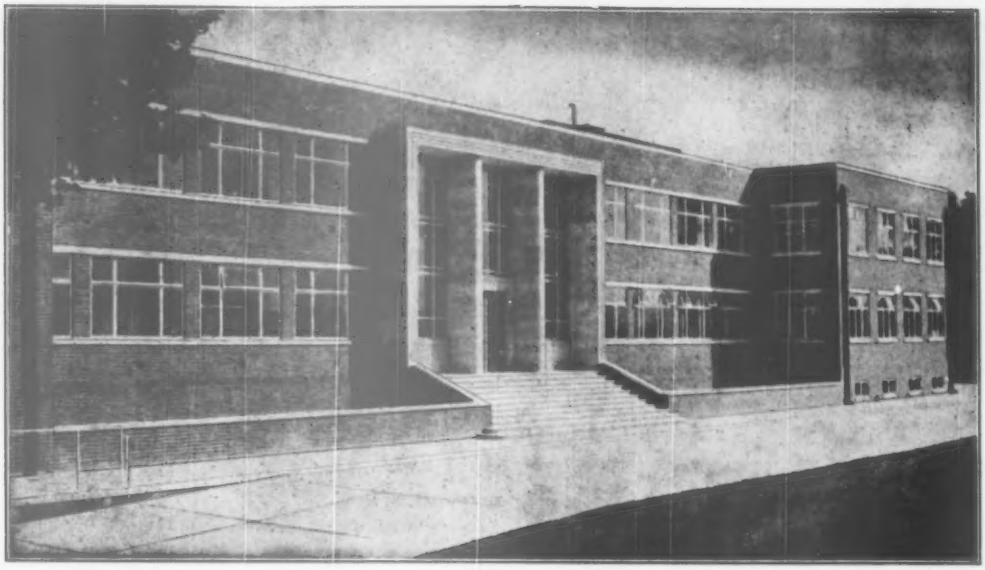

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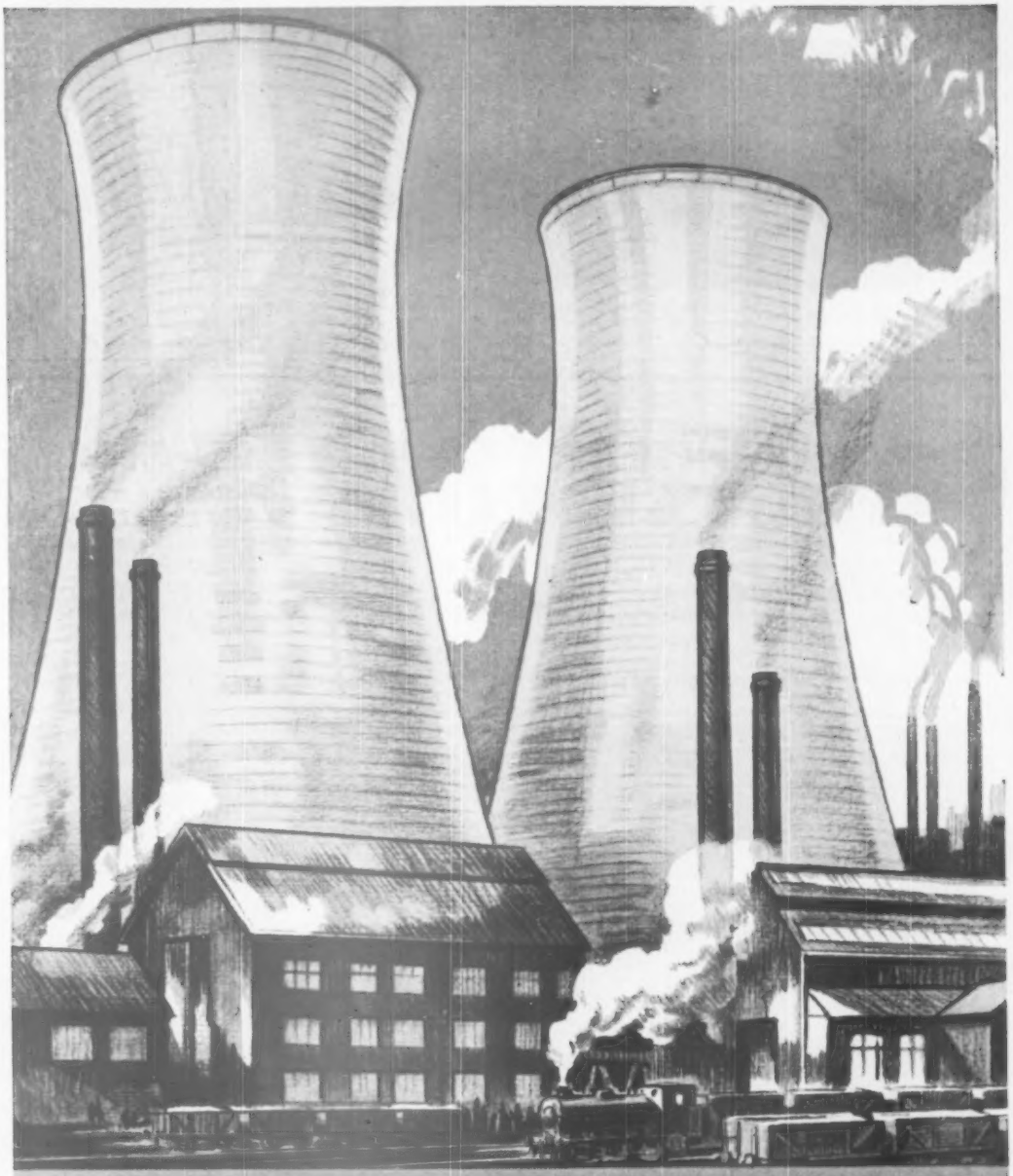

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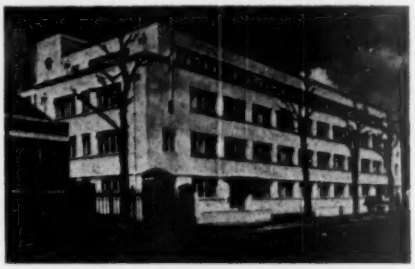

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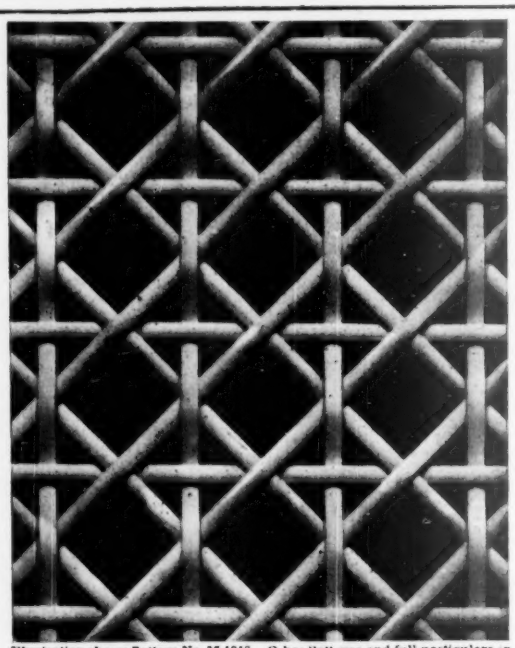

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Vol. 198. No. 4269.

THE ARCHITECT & BUILDING NEWS

October 13, 1950.

The "Architect and Building News" incorporates the "Architect," founded in 1869, and the "Building News," founded in 1854. The annual subscription, inland and overseas, is £2 15s. 0d. post paid ; U.S.A. and Canada $9.00

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CLEVERNESS AND WISDOM

IT has often been said that architecture is the resultant of a correct balance between logic and intuition—between science and art. The art and craft of building design, whether in the hands of an individual or produced through the labours of the members of a large team, is, therefore, unlike the activities of most other professions. To be successful, in essence, to function at all, the law, medicine, engineering and the rest must be specialist-masters of their own field to the exclusion of most other interests in their working life. Thus, it would seem, is the rapidly increasing specialist mind, so distinctive of the 20th century, produced, encouraged and bequeathed to the future.

It was Bertrand Russell who pointed out, as long ago as 1931, that uniformity of opinion and loss of human individuality is largely brought about by modern invention and technique. When everyman's views were fixed by what he heard, wrote, read or said, the individual, however much he felt himself a member of a community or decided to live outside its influence, was really an individual. Nowadays, the Press, the Cinema and the Radio have it all in their hands and even books are a long way behind. Men's minds are being drilled into grooves by these universal influences and, being bred to professional specialisation already, they are ready recipients of this treatment.

There can be no doubt that modern science and technique demand from society an increase, not only of sheer size but an increase in the type and intensity of the social organisation required to develop and maintain themselves—science and technique—at full efficiency. It is here that the individual falls out with the out-and-out planner; whether or not the reason is sensed by the average person, it is here that those who stop to think perceive a widening gap between science and art, between logic and inspiration. Here it is that democracy retires and totalitarianism may under extreme conditions take its place.

The architect is, by his training and the nature of his job, one of the first to feel the broadening breach—the drift towards a sort of intellectual civil war between the two sides of our social set-up. He cannot help doing so; because of his training he is taught to see all sides of a problem, to weigh up all factors in the search for a solution; he is (or should be) taught to balance the logical factors of his job—the scientific sides—against the visual appearance which results—the emotional effect against the cold-blooded equations of his plans. If the balance is lost his work suffers—architecture is lost; the practitioner, if this happens, becomes just another addition to the specialist minds—those so-useful folk who, admittedly, cannot, within the present size and speed of our society, be done without.

If architecture is losing its grip in these mid-twentieth century days, it is probably exactly from this cause; it is becoming too scientific (or too artistic!), too specialist (analytical) and not sufficiently "all-round" (synthetical). Its contacts with the society which it serves are so many, complex and ubiquitous that to survive an eclipse its practitioners must see that they do not lose their vision of the great wood in which so many fine trees may still be growing.

It was only a few days ago that Bertrand Russell added something to his *Scientific Outlook* of twenty years ago by telling the Philosophical Society that present-world people are extraordinarily specialised—each knew all about his own subject and nothing of anything else. "There was a great deal of cleverness in the world to-day, but extraordinarily little wisdom."

How true this is in general and apart from its veracity when applied to architectural specialisation. One brilliant man or team invents a Super-A-bomb

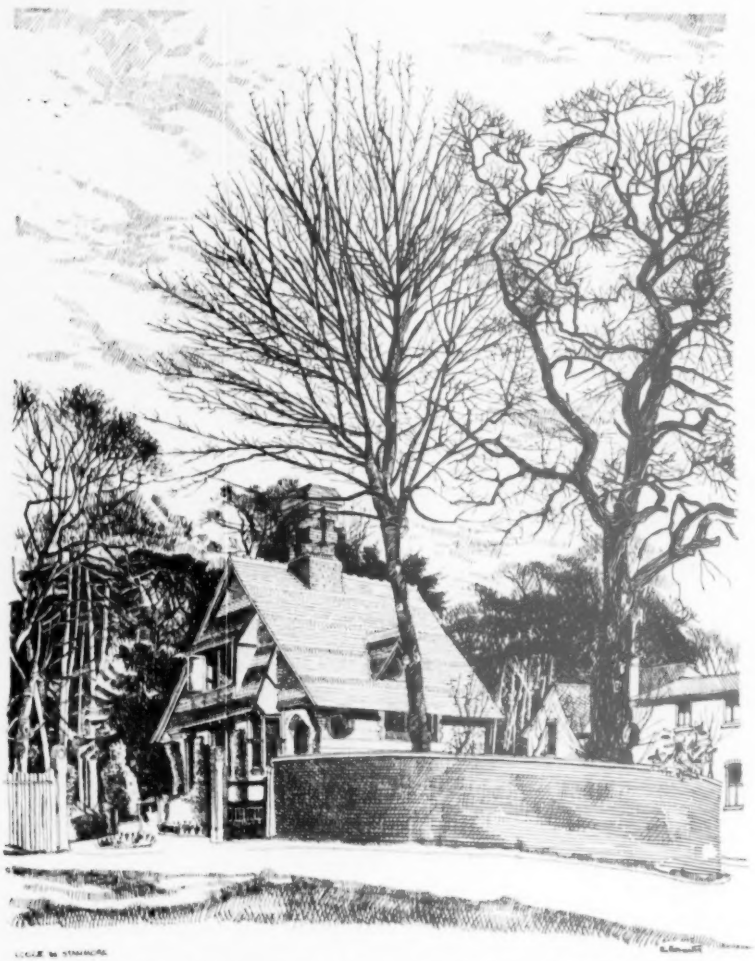
to blow society to pieces—perhaps for ever—without understanding what society is or what are its implications or their obligations to it; another man or team invents a method of preventing the explosion by means of an Anti-A-bomb or by drilling their part of society into mass-defence, also without understanding the relationships of either themselves or their society to the whole or of any obligations whatsoever. That, dear readers, is an illustration of specialisation's contribution to civilisation.

It is not only architecture that needs a new synthesis but the world of which it is a part. It is vision and imagination, intuition and inspiration—call it what you will—that lie behind a new approach to synthetical comprehension, instead of the sterile ends of mere analyses. It is how to use knowledge that is important and not only the knowledge itself. It is the plans that get the building built; it is obviously silly to deny the use of analysis in the production of the plans, but it is equally absurd to maintain that the end is the result of mere analysis. There is something else as well and architects—those who have not yet succumbed to the specialist trend—know this only too well.

But it is a small profession, and it has to live!

. . . . . .

". . . . the glorification of bias will lead to a gradual abandonment of intellectual honesty and the painfully conceived ideal of dispassionate thought. No doubt it is very difficult to put this ideal in practice, but to reject it as an ideal is to reject civilisation for barbarism." (*Olaf Stapledon*).



Lodge in Stanmore. Ink drawing by R. Rosner, A.R.I.B.A.

Multiple stores shopfronts at Canterbury and Witney designed by Percy Bartlett, F.R.I.B.A. See comment by Abner below, and illustration on the next page.

EVENTS AND COMMENTS

WELSH FLASHBACK

SOME weeks ago I mentioned a queer all timber building which I had visited during my Welsh expedition. Your curiosity may have been stirred and you may have been prompted to put it on your visiting list. If you have, pray erase it, for the building has been burned down.

STONE WALL TAYLOR

MAURICE E. TAYLOR, County Planning Officer for Fife, writes to correct me on dry stone walling (this page, September 22). He tells me that in the stewartry of Kircudbright the Agricultural Committee has been running some courses. If you are thinking of applying for a vacancy you should know the craft is called "dyking" in Scotland. Mr. Taylor thinks that stone walling is not the sort of thing which should be taught under government auspices, and recommends the method which he adopted; namely, of learning from a fell farmer. He claims that a morning of this type of instruction is worth a whole week in a government training centre. I am unable to say whether this statement is incorrect or not, but I see no objection to stone walling or any other craft being government sponsored. Does Mr. Taylor object to the activities of the Rural Industries Bureau ?

MULTIPLE SHOP FRONTS

MY remarks about the Burton-Henley row have brought murmurs of support from several people. I mentioned that Burtons were not the only firm whose shop fronts screamed at you in almost every town. Fortunately there are also firms who go to considerable trouble and expense to fit their shops in with the architecture which surrounds them. My photographs this week show three examples of Boots shops designed by their staff architects. The architecture, inevitably, will not please everyone but at least it must be admitted that the firm has taken its responsibilities seriously.

I remember the Canterbury shop being rebuilt. An old building stood on the site at the corner of Mercery Lane. On the other corner stands an equally old building which was once a hostel for pilgrims. Between these buildings is one of the most famous views of Canterbury. The original intention was, I believe, to alter and repair the old building, but it was found to be in such a bad state that it had to be almost entirely rebuilt. Some of the original timbers were however retained. The building as it stands is rather more ornate than the original, but its general shape is the same. Purists may condemn the firm for building what nearly amounts to a fake. I think they were quite right. What would you have done ?

FESTIVAL

A STUDENT of current affairs would, I feel sure, be able to relate, in terms of the international situation, the orange pink Festival handout describing the extremely complicated ticket arrangements, last week's architects' appeal to sign the British Peace Committee's petition and the news that the Clapham deep shelter, capacity 4,000, is to be made available for visitors to the Festival of Britain, at 3s. per person per night. With suitable noises off a higher charge might be paid by overseas visitors, the more frightened of whom would be fair game for members of the Peace Committee stationed at the exits selling tickets

for the Festival overstamped with a suitable slogan.

The ticket regulations are very ingenious and many of those who can and do read such announcements will doubtless do as they are bid, but what of all those who cannot or do not? I wonder what arrangements have been made to prevent unscrupulous persons from buying all the tickets for one day and selling them at inflated prices, or—and what a chance for Lord Beaverbrook, just throwing them in the wastepaper basket.

ALL IS NOT DEATHWATCH THAT TICKS

IF your house ticks and it is not death watch beetle it is probably a posse of psocids. These are minute insects, each about the size of a pin head, which live on moulds and fungi growing on damp surfaces. They sometimes appear in large numbers on new plaster. Psocids, says the D.S.I.R., are not normally a serious household pest, but if they arrive in such numbers as to become one just use ordinary household insecticide on them. No one knows how the ticking is done. The scale of noise to size seems colossal and I imagine that, under a microscope, a psocid would be found to have cotton wool in its ears.

BUILDING RESEARCH CONGRESS

THE Festival year is to be made the occasion of the first Building Research Congress under the presidency of Viscount Samuel. The congress will review progress in building throughout the world. There will be three divisions, Structure, Materials and Comfort and Efficiency. I shall have more to say on this subject next week, meanwhile all inquiries should be addressed to the Organising Secretary, B.R.S., Bucknalls Lane, Nr. Watford, Herts.

WONDER BOY OF THE SOAP BUSINESS

ACCORDING to the *Architectural Forum* Charles Luckman, new partner of busy $25,000,000 worth of work in hand—Los Angeles architect William Pereira, was until recently president of the American Company of Lever Bos. He has been in soap for 20 years and has earned the above unofficial title. I forget to mention that he was originally trained as an architect. This story shows that there is soap for architects yet.

LOW COST HOUSING COMPETITION IN U.S.A.

THE National Association of Home Builders and the *Architectural Forum*, with the help of a number of industrial concerns are organising a competition for the design of a 1,000 sq. ft. three bedroom house using only materials which are commercially available. The prize money totals one hundred thousand dollars but there are nearly a hundred prizes. All the same it will be possible for one entrant to win $15,750. *The Builder* please note.

LEEDS DELAY BIG PENAL REFORM

FROM the proceedings of the Watch Committee: Resolved. "That consideration of the application of the Leeds City Police Joint Branch for arrangements to be made for the chromium plating of handcuffs be adjourned."

L.C.C. EXHIBITION AT THE BUILDING CENTRE

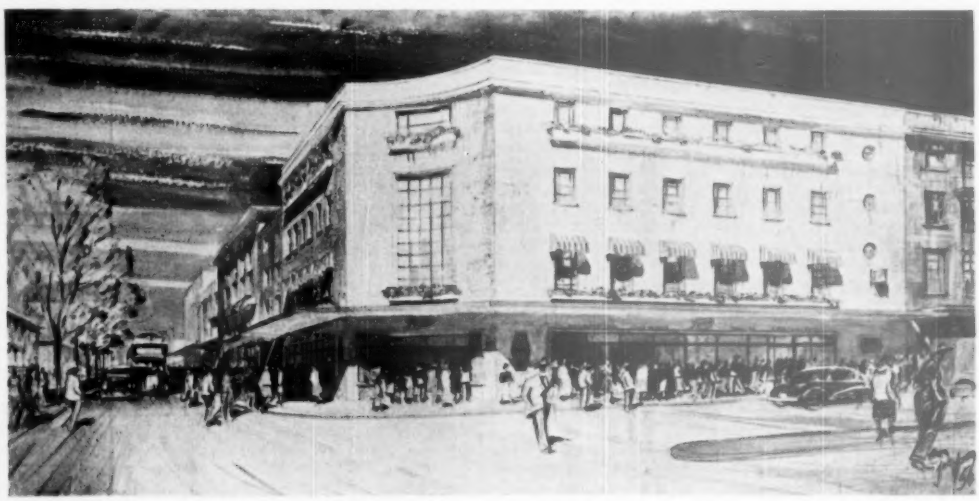
DRAWINGS and models of the "Live Architecture Exhibition" of the Festival of Britain will be on view at the Building Centre for three weeks from next Monday. The scheme, which forms part of the Stepney-Poplar Reconstruction Area, was reviewed in the A. & B. N. of June 9, but I believe that this is the first public showing of the models. The exhibition is arranged by the Architects' Department of the L.C.C.

ERRATA

I TOO, must apologise for the printers' rude comment on modern architecture in this column last week. The bottom picture, in case you did not notice, was upside down.

There have too, been rather a lot of misprints on this page lately, some possibly due to illegible corrections on the MS. by me. I will not bother you with the corrections but in future when you come across a particularly stupid remark or one which does not make sense always remember that it may be a misprint.

ABNER



Proposed new premises on a blitzed site in Plymouth.
Designed by Colin St. Clair Oakes, M.B.E., T.D., A.R.I.B.A., Chief Architect, Messrs. Boots.

NEWS OF THE WEEK

Foreign Town Planners Visit Scotland

Architects and town planners from Austria, Finland, Italy, Portugal and Sweden are attending a course on town and country planning in Scotland arranged by the British Council in association with the Department of Health for Scotland. They arrived in Edinburgh on October 6 and will spend the latter part of the fortnight's course in Glasgow.

They were welcomed by Mr. Tom Fraser, M.P., Joint Under Secretary of State for Scotland, on Saturday at St. Andrew's House, Edinburgh.

For the first nine days the course is based on Edinburgh and members will study the Edinburgh Plan and the potential development of rural areas, and will also visit Dunfermline and the North of Scotland Hydro-Electric Board's Scheme at Pitlochry. Lecturers include Planning Officers of the Department of Health for Scotland, the Town Planning and Housing Executive Officers of Edinburgh Corporation and the Dunfermline Town Planning Officer.

On October 15 members will travel by coach to Glasgow through Stirling, Balmaha, the Loch Lomond National Park area, Tarbet, Ardlui, Arrochar, Loch Long, the Gareloch and Balloch.

They will remain in Glasgow until the course ends on October 20 and will tour the city and its environs, including the plantation area of Govan, the Gorbals, the centre of the city for an example of gridiron development calculated to relieve traffic congestion, the Cathkin Escarpment to view the Clyde Basin, and the Lanarkshire mining areas. They will also visit the New Town at East Kilbride and industrial estates at Hillingdon, Port Glasgow and the Vale of Leven, as well as taking a trip down the Clyde.

Raphael Cartoons at the V. and A.

To-day, the gallery at the Victoria and Albert Museum containing the seven cartoons by Raphael is open once more to the public after 11 years. A special brick-built air-conditioned shelter was constructed to house them during the war as they were too large and too fragile to be moved from London. They will now be seen to better advantage than before in Room 48 on the ground floor of the museum.

The International Council for Building Documentation

A general assembly of the International Council for Building Documentation will be held in Paris, October 23 to 31.

The United Kingdom delegation will be Mr. B. Agard Evans, Ministry of Works, Chairman of the British Building Documentation Committee and member of the Provisional Steering Committee of the International Council; Mr. A. L. Gardner, Building Research Station, member of the International Council's Working Party on Terminology; Mr. J. C. Palmes, Librarian, Royal Institute of British Architects; Mr. John Perks, Executive Director of *The Builder*, representing the Council the Trade and Technical Press; Mr. Frank Yerbury, Director of the Building Centre.

In addition to the above, Mr. Robert Fitzmaurice has been invited as a guest of the French Government. Mr. Fitzmaurice is Chairman of the Housing Sub-Committee of the U.N. Economic Commission for Europe, Geneva.

Canada will be represented by Miss Roberta Brodie, of the Building Division of the National Research Council, Ottawa; Australia by Dr. J. E. Cummins, Senior Scientific Research Liaison Officer in London; India by Dr. Shembekar, Scientific Liaison Officer, London.

*

The Education of an Architect is the subject of the Manchester School of Art Exhibition which was opened by Mr. S. E. T. Cusden, O.B.E., President of the Architectural Association. Technical papers, including *The Architect and Building News*, are displayed as one of the essentials. The exhibition will be open until the end of October and will then go on tour.

*

Mr. George Hawley, Assistant Secretary of the Dept. of Health for Scotland, speaking at the annual meeting of the Scottish National Housing and Town Planning Council, said that a development plan was not intended to be either idealistic or a planner's dream. What was wanted were plans based on sound economic lines relating to the problems of the day that can be produced within some seasonable time; twenty years was probably far enough ahead.

*

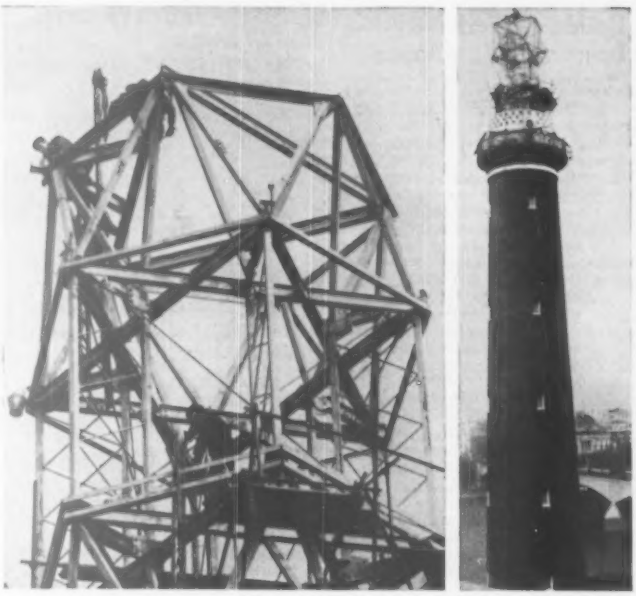
The first permanent church to be built for the Church of Scotland since before the war is to be erected at North Saughton Road, Carrick Knowe, Edinburgh, at an estimated cost of £25,000. Before the war the cost was estimated at £7,000. Plans were passed 13 years ago for a church and halls, but only the halls were built. A building licence was granted on September 22 by Edinburgh Dean of Guild Court. The architects are Messrs. Stewart Kaye and Partners, Edinburgh.

*

Kent County Council has made an order to preserve some 320 acres of woodland in the Tenterden Rural District. The area, which crowns the heights rising from Romney Marsh between Kenardington and Appledore, is a remnant of the original Wealden forest.

*

Following a review of the costs and prices of Plasterboard, the Minister of Works has authorised an increase of 1d. per square yard in the selling prices of Gypsum Plasterboard (Wallboard, all thicknesses, Baseboard and Lath) as from October 2, 1950.



Fixing the framework for the beacon on the Shot Tower for the Festival of Britain. *See also page 419.*

Builders' Clerks' Benevolent Institution Dinner

Sir Thomas Bennett, O.B.E., F.R.I.B.A., proposing the toast of the Builders' Clerks' Benevolent Institution at their dinner at the Cafe Royal on Tuesday, October 10, laid special stress on the problems of "old" people, whose support to-day often depended on large numbers of small subscriptions rather than small numbers of large contributions. Sir Thomas threw out a suggestion that B.B.I. funds might be invested in housing. Mr. Nigel Hannen, B.A., M.I.O.B., whose birthday it was, asked for more annual subscriptions. Speaking with endearing frankness, as befitted the occasion, he said "it's your money I'm after."

The purpose of the Institution was concisely explained by Mr. S. H. F. Pulley, F.R.G.S., who drew attention to the gap which exists between state aid and the cost of living. This gap, said Mr. Pulley, "the Institution tries to bridge."

Readers who may wish to help this good cause should send their contributions to the Secretary, J. D. Long, Esq., 47 Bedford Square, London, W.C.1.

APPOINTMENTS

Mr. Thomas Arnold Brittain, DIP.ARCH., A.R.I.B.A., has been appointed Borough Architect of Birkenhead, at a salary of £1,250 per annum. Mr. Brittain is at present Borough Architect of Widnes.

*

Mr. H. A. R. Binney, C.B., an Under Secretary of the Board of Trade, has been appointed Deputy Director of the British Standards Institution. Mr. Binney will be taking up his appointment next month.

OBITUARY

The death has been announced of Robert Sharp, F.R.I.B.A., of Wimbledon.

The death was announced on October 3, of Edward Meredith, F.R.I.B.A., of Essex, aged 62.

ARCHITECTS' WILLS

The late Samuel Joseph Stainton, F.R.I.B.A., of Olton, Birmingham, left £11,311.

The late Joseph Atkins Perry, of Compton Lodge, near Banbury, left £24,468.

COMING EVENTS

L.M.B.A.

- October 18, at 1 p.m. At Zeeta's Bridge Restaurant, Kingston-on-Thames. South-Western Area General Meeting. Speaker: R. R. Costain.

T & C.P.A.

- October 19, at 6.15. p.m. Students' Planning Group. "The Forgotten Half Millions." Speaker: Arthur Korn, F.R.I.B.A.

C.P.R.E.

- October 19-22. At the Spa Hotel, Tunbridge Wells. Twelfth National Conference. "Modern Developments in Rural England."

Conseil International de Documentation du Batiment

- October 23-31. At 33 Rue Jean-Goujon, Paris 8. General Assembly.

ERRATA

We regret that a certain number of copies of last week's paper had the bottom block on page 379 printed upside down.

On section AA of detail sheet 102, the detail at the head should be labelled B, and that at the cill C.

CORRESPONDENCE

Peace Petition

To the Editor of A. & B.N.

Sir,—I am disturbed that a periodica' of your standing in the architectural world should lend itself as a medium for political propaganda. It is singular that these appeals launched under any cloak, always number among their signatories one or more members of the Communist Party.

The British public refuse to be alarmed about atom bombs as they realise the menace of Communism is far more deadly in its insidious methods. We do not want our lives planned by any nationality of Communists.

Refugees from Europe who have suffered under the Nazi and Communist régimes, make one feel that if all the influential leaders of the Communist party could be exterminated by one atom bomb, production of these dreadful weapons could cease at once.

I am, etc.,
K. M. TOPP.

Battersea Park Pleasure Gardens

To the Editor of A. & B.N.

Sir,—Having studied the plan of the Festival Gardens in your issue of June 9 with interest, I note this week (Abner's column, Oct. 6) that Mr. Morrison has hinted that the gardens and their attendant paraphernalia may become a permanent feature.

I therefore crave more information on the "Emett" Railway station, which appears next to the S.E. entrance, together with some representation of a track shown at odd intervals on the plan, but with little rhyme or reason.

International exhibitions during the last fifty years have invariably contained a miniature railway, carefully constructed, and operated not only as a means of transport, but with locomotives modelled on prototypes of main line express locomotives.

I abhor the Tavern Cars as much as anyone else but British Railways have a heritage of fine designs in their express locomotives, and in model form would give overseas visitors with limited time in the country an encouraging impression of part of our railway system.

Readers of the *A. & B.N.* will be no doubt familiar with railways of this type, the best known being the Romney, Hythe & Dymchurch, which runs for fourteen miles along the Kent coast.

No one could be a more fervent admirer of Emett's delightful characters than I, but I tremble to think of what might result, and the impression gained by visitors to the Exhibition unless the authorities have some competent individual, experienced in the design and maintenance of such railways, to see that everything runs smoothly at all times.

At least I pray that it will really be operated by steam, and not be a petrol or diesel locomotive with dummy fittings as is so often the case. The great public is not so easily fooled as one might at first imagine.

I am, etc.,
R. D. BUTTERELL.

To the Editor of A. & B.N.

Sir,—"Abner" appears to have his facts concerning the rent arrangements for the Pimlico flats completely wrong. The tenants do not pay "a rent equal to one-sixth of (their) income *or* submit to a means test." They either pay the *economic rent* without subsidy, which equals 81s. per week for a three-bedroom flat (including district heating), or submit to a form of "means test" in which case the rent, exclusive of rates and district heating charges, is based on one-sixth of the main wage-earners' salary. *But* there is a minimum rent for each flat, being 37s. per week, inclusive, for the three-bedroom flat.

The theory is that upper middle class families should not benefit from the rent subsidies which are intended to bring relief to the lower-paid workers, but any form of means test is bound to be viewed with suspicion by anyone whose memory extends to the grim 'thirties, and the real solution is to reduce building costs and therefore rents so that measures of this type will not be required.

I am, etc.,
G. PLATZ.

Selected Appeal Decisions

IN our twice-yearly review of the bulletin of selected planning appeal decisions, we have invariably noted with regret that no appeal on the question of architectural design has been recorded. Whether our remarks have been heeded we cannot say, but in the latest volume, Number 8, two appeals on these grounds are included.

The appellant—an architect—wished to build a dwelling-house for his own occupation on a ¼ acre plot of land in a borough on the outskirts of London. permission was refused on the ground that the external appearance of the building was out of harmony with the development of the locality.

The house was of modern design. The appellant's original design included a copper roof which was almost flat, but to meet the wishes of the Council he had altered this to tile roof of 30 deg. pitch. He had also agreed to site the building further back behind a group of trees following the contour of the land. He represented that a house of modern design with a similar roof had been approved on an adjoining site after the first design showing a flat copper roof had been altered; that his latest design offended no architectural principles; and that planning control of external appearance of buildings was not intended to apply to cases such as this.

The Council stated that the house was unlike the ordinary development in the locality and they objected to its general appearance for that reason

The Minister said that the merits of an architectural design must always be a matter of opinion. He considered that the refusal of planning permission for the erection of buildings on grounds of design alone was not justified unless there was some evidence to substantiate the claim that the building, when erected, would have a seriously detrimental effect on the visual amenities of the neighbourhood. There was no such evidence in this case. The development in the immediate neighbourhood was very varied in character and of no architectural merit. It included houses of the speculative builders' type with occasional imitation half-timber work, a large rambling house in depressing grey stucco with casement windows and a tile roof of 45 to 50 deg. pitch and a Victorian building of yellow stock brick with a low pitch slate roof and sash windows. The appellant had revised his design more than once to meet the wishes of the Council and the Minister saw no reason to regard the development as in any way objectionable. He allowed the appeal.

The second case concerned alterations to a shop front.

The appellant carried on business as a baker and confectioner in the High Street of a northern borough. He applied for permission to erect a new bakehouse and effect other structural alterations to his premises including the alteration of the front of the premises to form a new shop front. The Council made their consent conditional on certain amendments in the submitted design, one of which was that the windows should be divided into six equal lights by means of one horizontal and two vertical glazing bars. The appeal was against the imposition of this condition.

The appellant maintained that it was unreasonable to insist that bars should be inserted when the overall size of the window was so small. He represented that he had to compete with the shop next door which had a modern front with large windows, that his shop was a small one and he needed as much window space as possible and that glazing bars would obstruct the view, harbour dirt and interfere with business.

The Council represented that the most notable feature of the street was its unity of development and the number of fine old shop fronts which remained, that the removal of some of the bow shop fronts and the disfigurement of other good buildings would have been prevented if control had been fully effective in the past, that it was desired to redevelop the street as a shopping centre and that the appellant's proposal was to be encouraged as long as the general appearance of the building was in conformity with that of the old shop fronts. They considered that division of windows gave character to a pastry shop and added to the goodwill of the business.

The Minister decided that the imposition of the condition was reasonable. It was clear that High Street was a street of more than usual architectural merit and that its character was worthy of preservation. He saw no reason to suppose that compliance with the condition would be detrimental to the appellant's trade. He dismissed the appeal.

We are pleased to note that the Council felt that architectural design added to the goodwill of a business.

Report of the International Conference of Landscape Architects

Madrid, September, 1950.

FOLLOWING the International Conference of Landscape Architects held in London in 1948, Madrid was chosen by the majority of the delegates for the second Conference, which was held there from September 20 to 24, 1950. One hundred and seventy-two delegates from twenty-two countries attended, the increase of members over those of the previous Conference being largely due to those from the South American States. Although the interchange of technical knowledge was hampered by difficulties of language, the Conference was an outstanding success.

The nightly receptions were not only remarkable in themselves but enabled delegates to mix in the most delightful circumstances. Especially to be remembered was the open air party given by the Cultural Relations Department of the Government, at which there was a display of traditional Spanish dancing, and that given by the Department of Agriculture in the famous gardens of the Aranjuez Palace. The Conference was accompanied by an Exhibition in the Crystal Palace in the El Retiro park, in which many countries took part and at which it was satisfactory to see a small British section more able than in the previous exhibition to hold its own with the best of European design.

During the Conference, it was announced that the Constitution of I.F.L.A. had been signed on September 23; that the Secretariat was being moved from London to Brussels; that the German Society of Landscape Architects was becoming a member; that the Spanish delegate, Señor Don Victor d'Ors had been elected a Vice-President; and that the next Conference would be in Stockholm in 1952.

The delegates were particularly grateful to the Sociedad de Amigos del Paisaje y los Jardines, of which Señor Don Victor d'Ors is the President, and who were the official hosts; and to the Señorita Conchita de Cossio de las Bárcenas, who organised both the Conference and the Exhibition.

The British delegates were: G. A. Jellicoe and Miss Sylvia Crowe, President and Hon. Secretary respectively of I.F.L.A.; Miss Judith Ledeboer, Representative of the British Institute of Landscape Architects; Miss Jocelyn Frere Adburgham, Mrs. Sheila Haywood, Haynes Hedley Stuart, Mrs. Jellicoe, Miss Mary Lysaght, Mrs. Ann Moorson, John Roberts, and Richard Sudell.

C.O.I.D. Scottish Service

A new service for Scottish industry, providing up-to-date references to the best examples of British and overseas design in subjects ranging from ocean liners to egg-cups, has been established by the Scottish Committee of the Council of Industrial Design.

Through a library service of photographs, books and cuttings now available at the Committee's offices at 95 Bothwell Street, Glasgow, industrial designers, manufacturers and others concerned with the design of manufactured goods will be helped to keep in touch with design developments in and out of Scotland.

The library, which will be regularly augmented by fresh material, is already equipped with a wide range of technical and non-technical books and a stock of 5,000 photographs supplemented by cuttings from 80 periodicals regularly scrutinised by the Committee's staff.

Photographs may be borrowed, or bought, at short notice. Cost of each 8″ x 6″ print is 5s. Books and cuttings, however, are only available for reference at the Committee's offices.

PAINT AND LINSEED OIL

The Ministry of Health has informed local authorities that as linseed oil is no longer subject to control and as paint is in free supply, it has been decided to withdraw all recommendations made by the Government for economy in the use of paint for building construction and maintenance. As regards housing authorities, the Paint Supplements to Circular 76/46 dated April 10, 1946, are now cancelled.

CHANGE OF ADDRESS

The Lead Technical Information Bureau has now returned to 90 Ebury Street, London, S.W.1, their address before the war. The telephone number, SLOane 0474 is unaltered.

Applications for publications, apart from technical inquiries, may be addressed direct to: Lead Industries Development Council, Eagle House, Jermyn Street, London, S.W.1.

ARCHITECT

HERBERT J. ROWSE, F.R.I.B.A.

The Woodchurch Estate, Birkenhead

SOCIAL CHARACTER

THE Woodchurch Estate is not a mere assemblage of houses placed on a plot of ground in the maximum possible density and monotonous regularity of layout and pattern, after the manner of the vast unplanned and uncontrolled suburban developments of the inter-war years: it is the architectural setting of a fully developed sociological conception of a community of people living within a defined neighbourhood, having a conscious identity of its own and equipped for the maximum possibilities of the full social intercourse of such a community. The comprehensive character of this project makes it of outstanding interest.

ARCHITECTURAL EXPRESSION

The houses are fundamentally simple in their conception. They embody contemporary standards of physical amenity such as is possible at the approved costs under present conditions. Architecturally they reflect a development of a sound English domestic tradition. The English house has long been held in high esteem in other countries as one of our country's notable achievements, and it is to be deplored that so much of the housing of the last century should have ignored the tested values inherent in this native tradition and substituted much that is arbitrarily novel and frequently meretricious and vulgar in taste.

One of the outstanding problems in the design of the Estate and one to which the Ministries and the Birkenhead Corporation have been sensitive, has been the avoidance of the depressing monotony which would result if some 2,500 houses were erected in the limited and familiar forms and finishes of the cheaper type of house. A reasonable variety in form and expression has therefore been encouraged. In general the brickwork is of a good, common quality and architectural interest is being achieved by the application of lime-wash, pigmented in a range of quiet tones of yellow, blue, pink and grey, alternating with white. Additional relief will be given by the use of different types of facing bricks in limited, selected positions where they are likely to be most effective. Various types of roof tiling make a further contribution. This is a fundamentally economical approach to a difficult problem. The interiors of the first houses are being decorated in a warm ivory shade on the walls and a pale shade of blue on the ceilings.

CONCRETE FLOORS

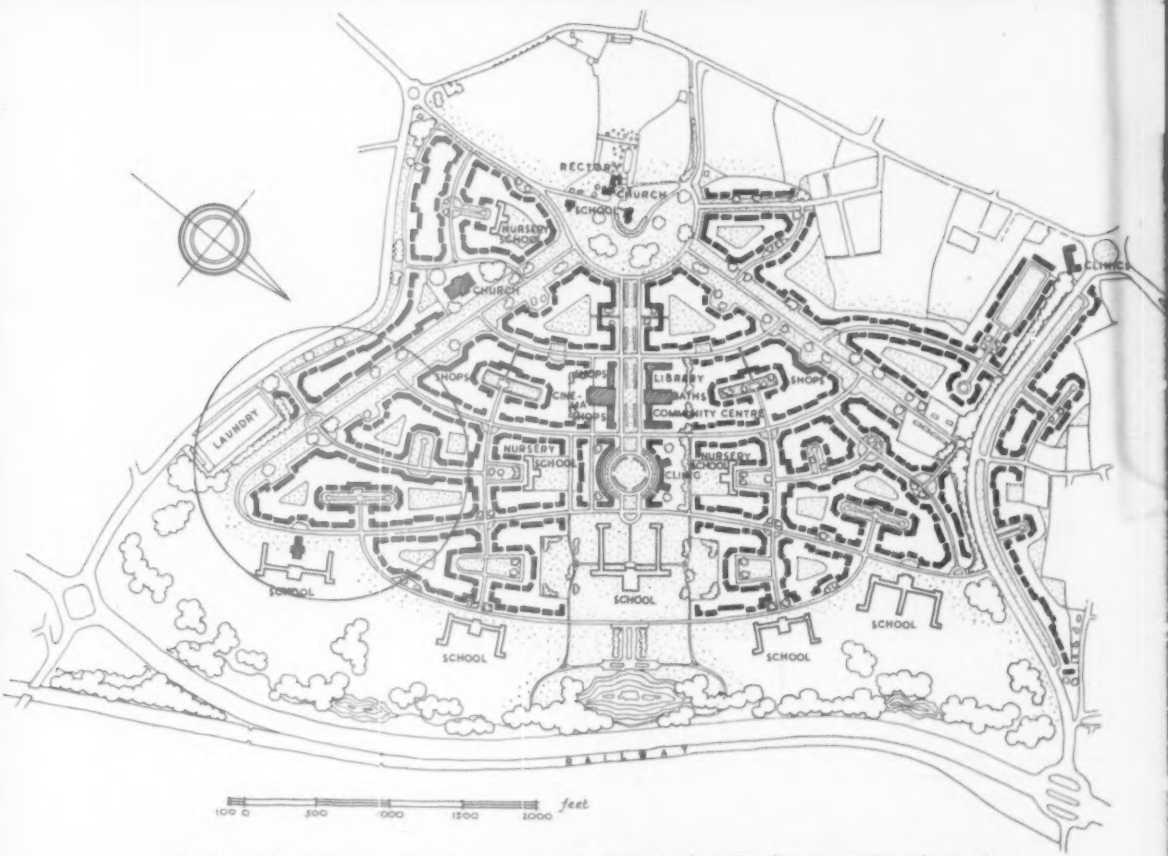
A concrete floor construction at bedroom level is an original feature in the first group of houses and this has been watched with great interest by the Ministries concerned. If properly organised, these floors may be economical and efficient in terms of production and erection, and not only do they effect a saving in the total height of the house, but they facilitate allied building operations and the progress of the work, and in appearance they present an attractive beamed effect on the ground floor rooms.

FLOOR FINISHES

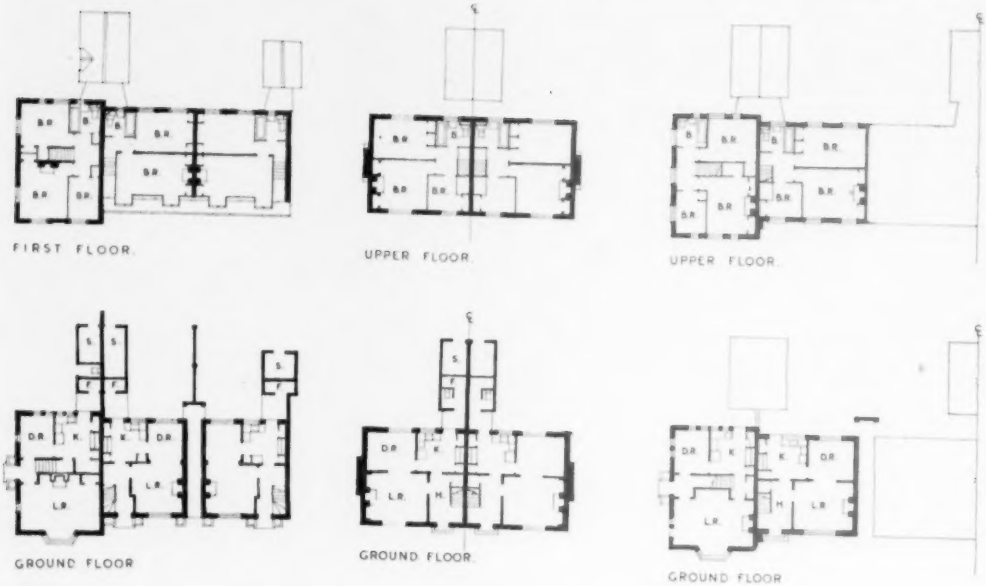
The ground and upper floors are finished in a polished asphalte, neutral brown in colour, acting as an insulation and reducing the requirement of soft floor coverings to the minimum.

INTERNAL PLUMBING

A simplification of the facades of the houses and



The Woodchurch Estate. The circle encloses the area in which the illustrations have been taken.



Type plans for two, three and four bedroom houses.

a reduction in maintenance has been achieved by the provision of internal, accessible plumbing to the sanitary fittings. Such plumbing commonly contributes to an unattractive disorder on the backs of houses. On this estate, there are no "backs" in the usual sense of the term, the houses being finished as whole units and the prospects in the rear presenting an amenity not markedly different from that of the street frontages.

DETAILED PROVISIONS

The houses generally are of 2, 3 and 4 bedroom types with special accommodation for elderly people. So far as is practicable, the aspect of the houses has been controlled in the planning in order to give the living rooms a maximum amount of sunlight.

Dining rooms are provided with a direct service contact with the kitchens and in turn may be opened up by means of double doors into the living room in certain cases, thereby giving the maximum utilisation of the total living space when desired.

Fitment cupboards are provided in bedrooms and a kitchen dresser fitment with supplementary broom and dry-goods cupboards is part of the kitchen planning.

SITE DEVELOPMENT

The scheme provides for approximately 2,500 houses.

The Plan is developed on the basis of the natural topographical features of the site which rises gently from the Fender Valley up to the wooded Arrow Hill and its historic church.

Every effort has been made in the planning of the Estate to provide prospects of the attractive rural surroundings from every possible point and to allow the maximum amount of rural character to permeate the estate by means of planted green closes, forecourts, quadrangles, recreation spaces and allotment gardens; also by means of three broad planted parkways converging on the hill. Small ornamental lakes,

fed by the Fender Brook, lie within a green belt on the north-easterly fringe of the site.

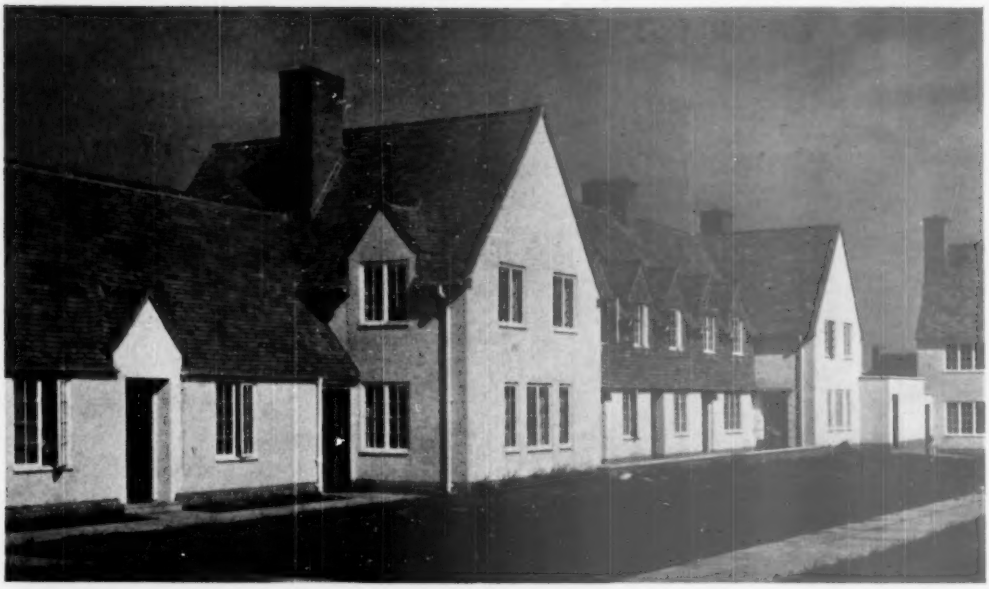
In contrast with the familiar monotony of streets or their suburban counterpart, the estate will present varied internal prospects of groupings of terraces and

The Woodchurch Estate was awarded one of the M.o.H. Housing Medals. This picture shows the high quality of finish in the use of traditional materials.

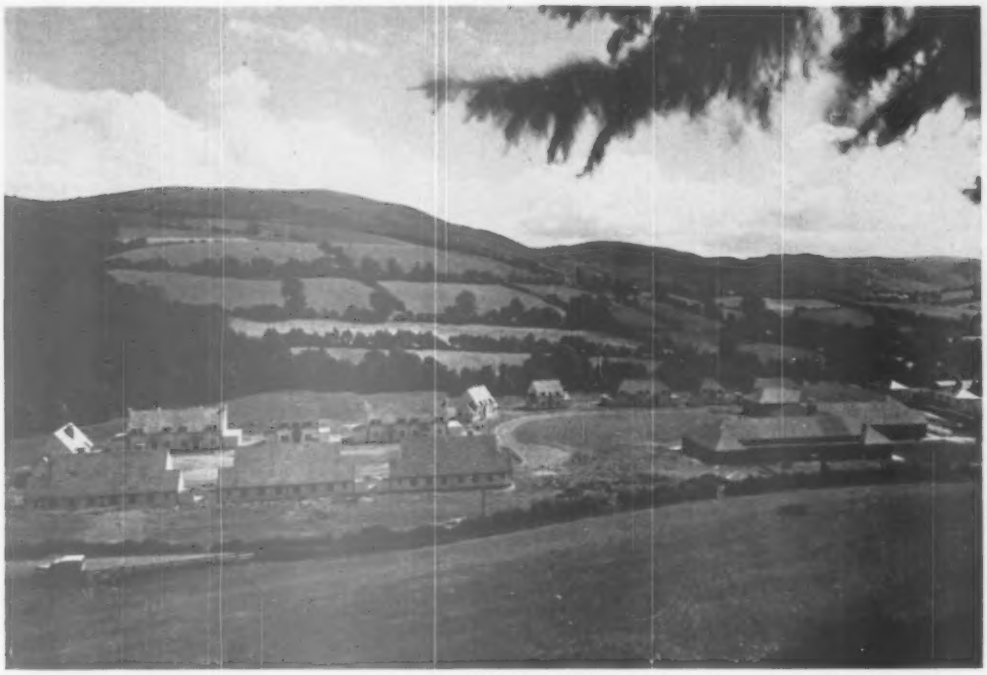
small blocks amidst trees and green spaces, having the general character of a contemporary version of the traditional English village scene.

Full advantage has been taken of the relaxations permitted by the Ministry of Health's Model Town Planning Clauses to reduce the expanse of the roads and therefore the familiar areas of glaring concrete road surfaces to a minimum, with consequent advantages of amenity and economy.

The raised and planted Green surrounding the churchyard will give on to a central parkway, slightly more formal in character, and flanked by the community buildings which will provide for the social life of the community. These buildings include Shops, Baths and Assembly Hall, Community Centre, Cinema, Library, Clinic, etc. Schools, churches and supplementary shops are placed in selected positions in various parts of the estate.



WOODCHURCH ESTATE, BIRKENHEAD
ARCHITECT: HERBERT J. ROWSE, F.R.I.B.A.

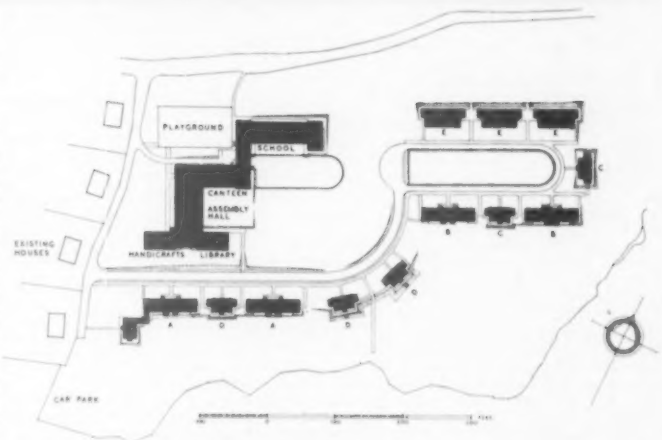


Llanwddyn Rural Development at Lake Vyrnwy

THE Vale of Vyrnwy is a vast area of over 23,000 acres, owned by the Liverpool Corporation Water Undertaking, is fully used in the following ways: part by the lake and works; part by afforestation; and part for agricultural purposes, including the moorlands for sheep grazing to the number of 9,000, and substantial areas of the lower ground consist of arable and pasture land for the most part administered directly by the water undertaking, with a few farms let to tenants.

There is no doubt that the present trend of the country people is towards community life, and it is recognised that children in rural areas must be given an opportunity of obtaining a higher standard of education under more modern conditions: moreover, some provision must be made for adult education and recreation.

The Liverpool Corporation has had under consideration for some time a scheme to provide these improvements, and the Montgomeryshire County Council has similarly taken a great deal of interest in the matter. The two authorities joined forces and have now completed a scheme to provide a new Primary School and Community Centre. The beneficiary by the scheme is a tiny hamlet on the shores of Lake Vyrnwy, which supplies water to the city of Liverpool — called "Abertridwr," the estuary of the three waters—in the very heart of Wales.



Around this school and community centre the Liverpool Corporation have been responsible for the provision of housing for workmen who are employed at the waterworks and on the large afforestation schemes now being carried out in the area. Careful consideration has been given to the housing needs of the old people, and the scheme provides for single-storey dwellings to which the workpeople may retire and rest when their period of service with the Liverpool Corporation is terminated. A site has also been earmarked for football, tennis and bowls, so that this community can make its own contribution towards the revival of rural life, which has been steadily declining owing to the attractions of town and city life. The hall will be provided, in due course, with a wireless and portable cinema.

The Liverpool Water Committee have shown great interest in the scheme, and their assistance has made it possible to provide this settlement, which will serve as a model for further schemes that are now being prepared by the Montgomeryshire Education Authority for other villages.

Essential services, such as water, sewage, and supply of electricity, have been included in this scheme and will receive prior consideration in all future schemes for the redevelopment of villages in Montgomeryshire.

School and Community Centre

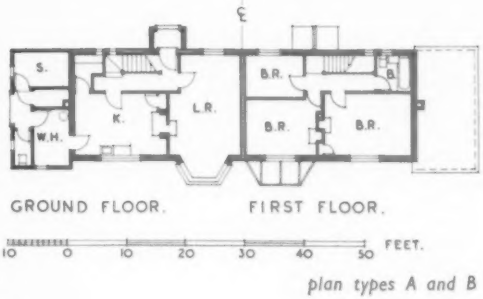
THE School block is planned to accommodate 100 children. The accommodation provided consists of three Classrooms each of 500 ft. super in area, with a Store room leading off each room and a Stock Store entered from the main corridor. Cloakroom and sanitary accommodation is provided at both ends of the main Classroom Block and each wing consists of Cloakroom, Lavatory, and Sanitary Offices, one wing being for boys and the other for girls. Staff accommodation consists of a Staff Room and male and female toilets.

A canteen consisting of a Dining Room and Kitchen is provided for use by both the school and the community centre and is planned as a link block between the School and Assembly Hall. The Dining Room will seat up to 100 persons.

The Community Centre consists of an Assembly Hall of 2,000 ft. super in area, with Stage and Dressing Rooms. The Stage is fitted with stage lighting. The main entrance to the Assembly Hall is from a Foyer at the south end, which also gives access to a Library and a Handicraft Room and also a Cloakroom and men's and women's toilets which serve the Community Centre. A Club Room is also provided adjacent to the Kitchen from which refreshments can be served to the Club Room direct. An office and a Caretaker's store are also included.

The external walls are faced with grey-brown Stamford facing bricks and the pitched roofs are covered with plain hand-made roofing tiles of a similar texture.

Fourteen Houses and six Pensioners' Bungalows have been provided, the houses consisting of six detached houses and four pairs of semi-detached houses.



plan types A and B

Houses

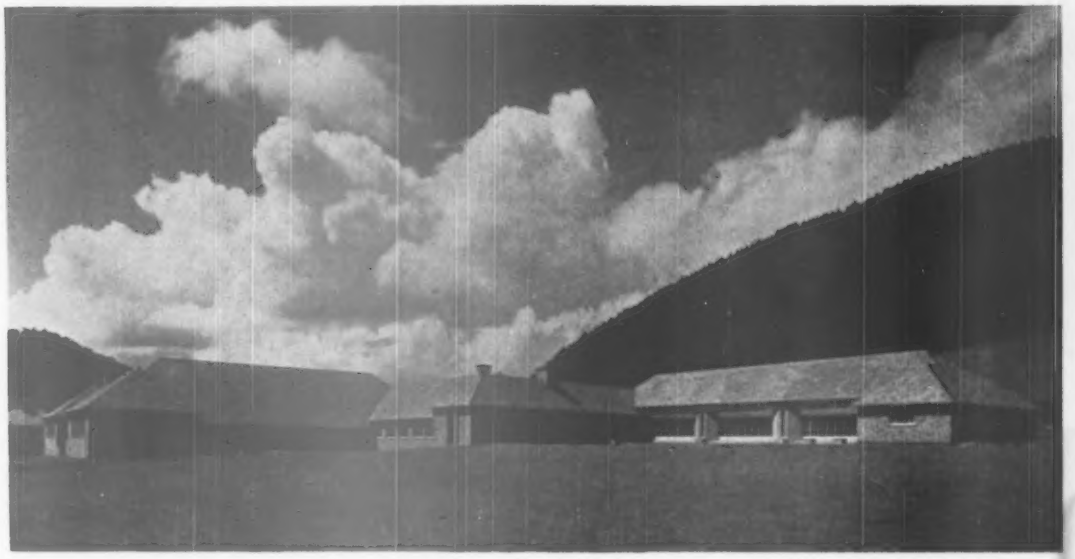
The accommodation provided in the houses consists of Living Room, Kitchen, Wash House, Larder, Store, Fuel Store, and w.c. on the ground floor, and three Bedrooms and Bathroom and w.c. on the first floor.

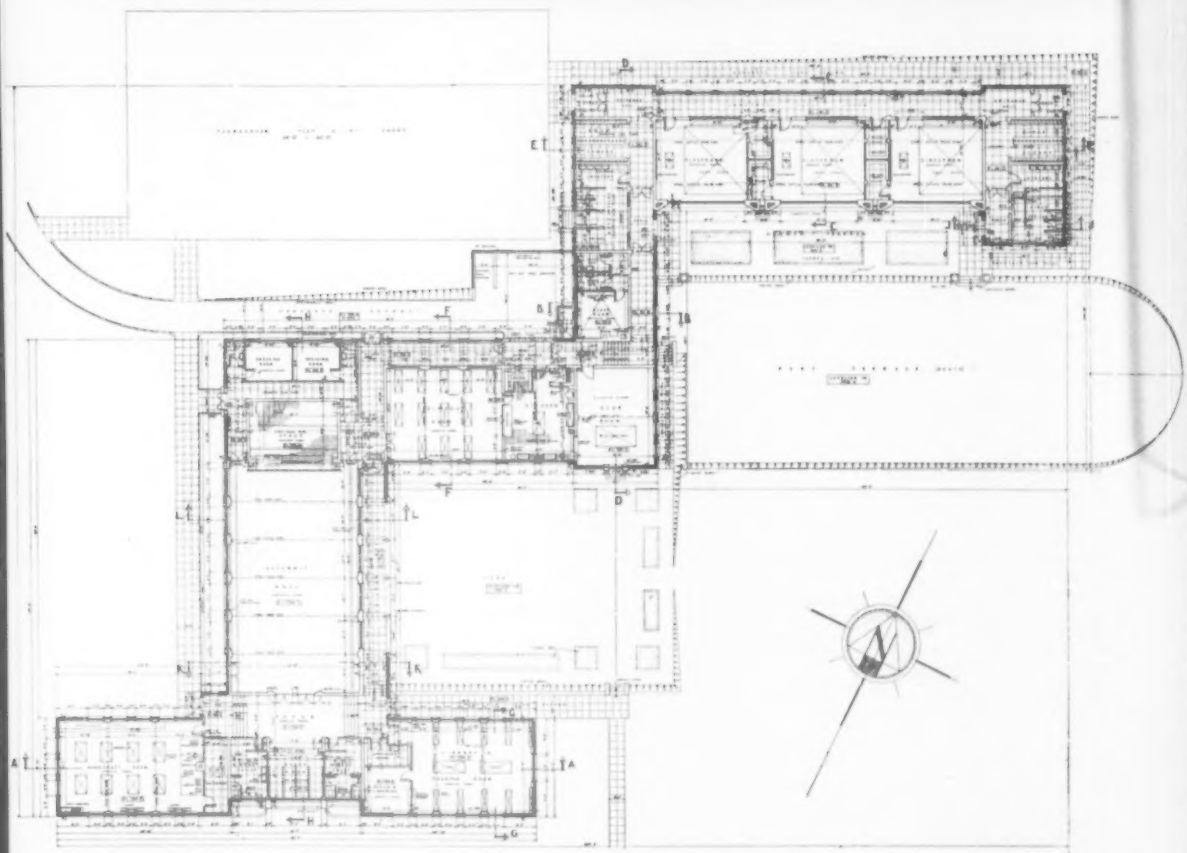
The Pensioners' Cottages, each have a Living Room, Scullery, Larder, two Bedrooms, Bathroom and w.c. and also a Coal Store. They are connected by link walls which form sheltered areas around which seating has been provided.

All the houses have steeply pitched roofs covered with plain hand-made tiles and the walls are finished externally with roughcast coloured cream.

JOINT SCHEME FOR SCHOOL AND HOUSING AT LLANWDDYN, MONTGOMERYSHIRE

designed by H. CARR, F.R.I.B.A., F.R.I.C.S., County Architect





SCHOOL AND COMMUNITY CENTRE AT LLANWDDYN

TIMBER IN BUILDING

an article by R. G. BATESON, M.A., (Oxon), *based on a lecture given under the auspices of the* M.o.W.

NO two pieces of timber are exactly alike, will behave in exactly the same way, or can be made to behave in the same way. If this is always kept in mind it helps one to treat the material with proper respect and due humility. Of course, for many building purposes we are not concerned with the more detailed variations we must expect to find and many points I shall hope to bring out are based on average experience, ignoring the behaviour of freak specimens. It is necessary to speak of timber in this way—or else to keep silent—because research is constantly revealing new variations and new timbers which do not conform to the rules drawn up for the majority of timbers which we have been accustomed to deal with in the past.

The part played by Timber in Building Construction because of the peculiar properties of the material

Apart from the fact that all other materials in competition with wood also suffer from drawbacks and peculiarities, though not necessarily of the same kind, timber has certain outstanding advantages which make it the obvious choice for so many building uses.

The properties of wood which in my view most commend it as a suitable material for building are:

(1) Its high strength in relation to its weight.

(2) The ease with which it can be cut and adjusted even with ordinary hand tools.

(3) The high aesthetic appeal of joinery work.

(4) Its relatively low thermal conductivity and capacity.

(5) Its durability under certain conditions, resulting in low maintenance costs in many applications.

(6) Its relatively low cost—though this is less marked to-day than ever before.

High Strength in Relation to its Weight

This is only true if timber is used intelligently having due regard to grain direction, natural defects such as knots and methods of jointing.

In many structural applications in building it has not been possible to take full advantage of the strength properties of timber because of the difficulty of carrying the load at joints. Within recent years the development of the timber connector, which enables the load to be spread over a bigger area, has helped in this direction and has been successfully applied to roof trusses, notably by the Timber Development Association. More recently the use of glued joints has made a contribution, but as yet these have not been employed extensively on ordinary housing work.

Timber has certain rare properties, not often appreciated—at any rate consciously—even by people long accustomed to use it. It is able to withstand considerable overload for short periods without fracture or permanent deformation and has also very high resistance to fatigue, that is, resistance to repeated reversals of stress, which in some metals may lead to sudden fracture. Both these special properties are of some value in building, the former because provision need not be made for the very occasional overload that may occur from time to time, and the latter because buildings are expected to endure for much longer periods than other "machines", and a fatigue failure might be disastrous were it to occur in a beam or joist.

Before leaving "strength properties" a word might be said about resilience and resistance to abrasion which are connected with strength characteristics. The property of an elastic material like timber to deform and recover under light loads is useful in building and is much appreciated by things striking it, like human feet and crockery. This property also contributes to the life of floors subject to abrasion.

I might add a word or two about stress-grading as it is a topical subject. There are no signs that stress-graded timber will be available on the market in the same way as commercial grades, in the immediate future, but the Finnish Government is experimenting on these lines and holds out hopes that stress-graded timber will be exported at prices not much above the commercial grades.

As far as ordinary house building is concerned there are difficulties in the use of stress-graded timber. The pieces would be graded in their full section and length and would be required to be used the right way up, that is with the knots on the compression edge, etc., and if cut or turned the wrong way re-grading would be necessary.

In my view an experienced and intelligent carpenter must often carry out a certain amount of unconscious stress-grading and indeed with inferior timber it is almost assumed that he will.

Cutting and shaping building timbers

With the possible exception of some of the new, relatively expensive plastics, there are no building materials that can be so readily and easily sawn, planed, chiselled and drilled as timber, and, moreover, the ability to take and hold nails and screws without pre-drilling, is an almost unique property. Clearly these are things which matter more in building than in any other industry, since so much work is done on the site, and so often by small builders without the capital to invest in power tools and other special equipment.

There are two aspects of the cutting and shaping of timber that arise in building. The first, which can be largely eliminated by forethought and careful planning—as is done in prefabrication—involves the cutting to length of rafters, joists, purlins, hangers, struts, binders, spreaders, etc. Careful setting out on the workshop floor and the use of jigs make it possible to do the bulk of the cutting off the site—but, of course, even here the superior "cutability" of timber is an enormous advantage. The second aspect involves the installation of services, fittings, internal and external equipment of all kinds, and subsequent alterations and repairs. By very careful planning and by being able to forecast and rely on the type of fittings and equipment that will be supplied, much of the cutting and boring necessary can be done off the site, but at best only some can be done, as building is not an exact science and dimensions cannot be calculated and relied on to a thousandth of an inch as in engineering. In the interests of timber economy it is obviously desirable that all structural members should be selected and laid out in advance, and there is a lot to be said for setting out roof trusses in the carpenter's shop and juggling with the available lengths and sizes until the best use is made of the timber at one's disposal. This is obviously far more important to-day than ever before, because the timber merchant is often unable to supply the exact demands of the builder and has to deliver the nearest lengths and sizes that he has in stock.

The low thermal conductivity and capacity of timber

The thermal conductivity of timber, two or three times that of cork, but only a third to a tenth of such building materials as brick and concrete, obviously is of great value where timber is used as the main sheathing material for houses. But here—and particularly just now—we cannot use timbers for walls and panelling and the chief uses where low conductivity and capacity are of value are in flooring and joinery. There is another property, bound up with conductivity and capacity, but also involving texture and intimacy of contact obtainable, and that is warm to the touch. Materials which strike cold are often unpleasant to live with and may be dangerous to health, and there is no doubt that from this point of view timber is a very good, if not necessarily an ideal, material for floors and furniture with which we come into actual physical contact at all times and often when we are without the protection of clothes and footwear.

As we depend so much for our comfort on intermittent heating, it is of importance that the stuff with which we line our rooms should not absorb a lot of heat before it warms up to something approaching the air temperature we require for comfort. Timber is such a material, and while not the best, is a good deal better than many other common building materials. A room panelled in wood and with a timber floor takes less time to warm up to a comfortable temperature than one that is plastered and floored with concrete, though, of course, the heat energy required to maintain that temperature will depend on the heat loss through the walls, floor and ceiling, and is largely dependent on what lies behind the internal lining. The importance of insulation is well realised to-day, and better insulation can be secured without using wood than by using wood alone and, therefore, so long as we employ a lining material that does not strike cold and heats up readily, we are not so much concerned with what methods are used to reduce the loss of heat when the steady state is reached.

Figures for the thermal conductivity of various building materials will be found in numerous text books and manuals, and, what is of more practical value, the Overall Heat Transmission Coefficient "U" which includes the surface conductance coefficient as well as the thermal conductivites of all the materials comprising a structure.

Reference to these tables will show that the ordinary ventilated suspended softwood floor is not so efficient in conserving heat as a pitch-mastic or concrete floor, but can be made nearly so by suspending two layers of aluminium foil between the joists.

The durability of timber

Later I shall discuss methods of protecting timber against destroying agencies, and here I shall merely point out the advantages that timber possesses over other materials in certain respects when conditions are not those that would lead to its destruction. Timber, if kept dry (or very wet for that matter), will last almost indefinitely and does not corrode or "age" appreciably, that is to say, does not tend to change its chemical or physical composition to any appreciable extent. Moreover, even if exposed to wet and then given an opportunity to dry out again fairly readily, it does not suffer in the process in itself, although by swelling when wetted, and shrinking when dried, it may indirectly cause damage either to itself or to surrounding materials. Timber within a dry building will only fail in its functions when it either becomes worn away, as in a floor or a staircase, or when subjected to excessive stresses for which it was not designed. Used externally in positions where it can dry out after rain, it

will outlast most materials without attention, but unfortunately, there are few external building applications where complete drying out after rain can be relied upon and consequently from this point of view, it is not so easy to defend the use of timber in such places as windows, sills and lintels.

Within a building in positions where some ventilation occurs, condensation may develop from time to time, and will have no permanent effect on wood, but on unprotected steel condensation will cause rust to develop and in course of time, the steel member will corrode away. Even if protected by phosphating and other rust inhibitors—and if the coating remains undamaged by mechanical agences—corrosion will eventually occur. Generally speaking, timber tends to improve in appearance with age and, of course, if polished regularly acquires a depth of mellow beauty which cannot be secured without the time factor. As far as I know timber is unique in this respect. Some of the newer materials may have lasting properties comparable with wood, but it is as yet too early to say.

The cost of timber

In positions where timber is used in buildings in direct competition with other materials, as for instance in structural member in roofs and floors, it was at one time easily the cheapest solution of any small scale problem as met in ordinary house building. But the present high price, combined with world scarcity, have changed the position a good deal, the margin has narrowed so that where its other advantages are not in demand, it may sometimes pay to use alternative materials like steel, reinforced concrete and aluminium alloys. If these alternative materials were not also in short supply, they would have replaced timber to a bigger extent than they have, and it is not improbable that with improvements in production methods, their cost may fall, while the price of timber is likely to remain higher than it ever was before the war. But other materials require coal for their production, whereas timber only needs the relatively small amount of fuel and power for its conversion and transport. Thus, while coal is scarce and expensive, or until atomic power is available at a cheaper rate than coal power, timber is likely to hold its own for small-scale structural purposes. Also we must not forget that plywood and laminated wood products are in their infancy as yet, and may be developed to a point where they rival steel and other materials even in comparatively big structures.

Methods employed in the preparation of timber to ensure satisfactory performance for carcassing and joinery

The above review of some of timber's properties may draw attention to some of the points to be watched in preparing timber for for building purposes so that it may give satisfactory results.

We must now deal separately with carcassing timber, timber for joinery, hardwoods and softwoods, though much will apply to them all.

I am trying to be realistic and to deal in a practical way with things as they are to-day and are likely to remain, as far as I can see, for some years at least. Assuming that the quality of timber offered must be accepted without much picking and choosing, there remains the sort of thing over which the architect, the surveyor, the clerk of works, the builder, the foreman and the craftsman can have some control.

Of these, in my view, the most important thing to watch is that the timber should be more or less suitably seasoned. I say this for two reasons: first because to-day, unless we have phenomenally dry weather like in 1949 the timber is likely to be supplied by the merchant in a less seasoned state than before the war, and secondly, owing to the ever increasing felling of smaller trees the proportion of sapwood included will be higher and the tendency to warp will be greater.

It is possible to use virtually straight grained, clear, Douglas fir or redwood cut from large trees when it is practically green and experience no great amount of trouble in carcassing work beyond some slight settlement of joists as the timber dries out, but it is quite a different matter when through and through sawn softwoods, containing a large number of knots, the heart and twisted grain, and cut from small trees are employed. What happens is well known; rafters and joists bow and twist, knots fall out, shakes and splits develop.

Unfortunately much of the softwood coming from Northern Europe to-day, particularly from Finland, is cut from small trees from second-growth forests. These trees may be only 7 or 8 inches in diameter and it is clear that in order to get a 2 in. × 7 in., say, from an 8 in. or 9 in. diameter log it is necessary to saw through the heart, so that the heart or pith appears on or near the face of two scantlings. This is bad practice and was never done by good mills before the war.

When such pieces dry out they will inevitably "cup"; that is become concave, on the side remote from the heart, and morevoer, as it is very unlikely that the saw cut will follow the axis of the tree, it follows that there will be a tendency for this effect, brought about because of the difference in shrinkage in the radial direction, and in the direction tangential to the growth rings, to be felt in the length too, so that bowing, springing and twist will occur.

I recently inspected, with a party of experts, very large stocks (about 1,000 standards) of softwood from all parts of the world including some pre-war stocks. The experts for the most part said that the present day stocks were unsuitable for joinery. If they had qualified that statement with the remark "under the existing system and method of seasoning" I would have agreed with them. The fact is that even good joinery manufacturers expect to use much of their timber as it comes from the stacks and further drying is bound to occur after machining and assembly. With good pre-war quality softwoods they would get away with it. To-day it is necessary to continue the seasoning process further before machining and assembly. The timber may be just as suitable if *suitably prepared*.

There is unfortunately no way of assessing the moisture content of timber except by actual measurement with suitable apparatus, yet a knowledge of the moisture content is essential if one is to know whether timber is suitably seasoned for the job it has to do.

The well known oven-drying method of moisture content determination involves cutting samples from the timber and for that reason alone is ruled out for most building work, but the moisture meter which gives an instantaneous reading of the moisture content merely by inserting needles like gramophone needles, into the surface of the wood deserves to be more widely used in the building trade. The results obtained are not so accurate as with the oven method, but every piece can be tested and it is probable that at least as true a picture is obtained of the moisture content of the whole parcel as would result from one or two isolated samples tested by the oven method.

The cost of these meters is not beyond the average builder or contractor and several makes are available in this country.

If one cannot buy wood that is dry enough one must do what one can to dry it oneself; that is a special problem that has to be dealt with as best one can in the circumstances. I know that as things are to-day it is often impossible to secure dry timber or hold it long enough for further seasoning, but at least one should know of the consequences of insufficient seasoning and wherever possible make allowances for the inevitable shrinkage and distortion that will occur.

Other points connected with the preparation of timber but not with seasoning are whether the need for preservative treatment arises, selection for special purposes, cutting so that big knots do not occur at points of high stress, re-sawing or deeping to get rift sawn material out of thick flat-sawn scantlings, correct cutting angles on tools to secure the best finish, proper grain filling and knot stopping for painting or polishing, and dozens of other small points well known to the experienced building technician or timber craftsman.

What applies to softwoods, applies to hardwoods, only more so. Hardwoods shrink and swell more than softwoods, are stronger and more difficult to restrain when they warp and are generally more difficult to machine. They also take longer to season and usually degrade more in the process. Except for decorative reasons it is usually a mistake to use hardwoods for most building purposes, but under present circumstances we may have to use the cheap light-hardwoods where normally we should have employed softwoods.

Care of timber on the site and during construction

Having done what one can to ensure that the timber is most suitably prepared the next step is to see that no harm comes to it in transit or on site awaiting building in.

The only advice I can offer in a general way is to keep it safe from mechanical damage, and to store it properly stacked, protected from the weather. If the timber is reasonably dry the best thing is to stack it close and sheet it with tarpaulins to keep out the air. It should, of course, be stacked on a dry base or well clear of the ground if no dry floor is available. There is a good deal of misconception about the storage of dry timber on site. If it really is dry the object should be to keep the air away, when it will remain dry even in very damp weather for long periods.

Of course, if it is unseasoned, it should be open stacked under cover. On no account should it be allowed to get thoroughly soused by rain, or weeks of seasoning may be undone in a few hours.

Before discussing the care of timber during construction or building into the shell, as distinct from storage on site, I should like to refer to the care exercised by the Norwegians (who understand their own timbers very thoroughly) to protect timber-work in building.

In the 13th century the medieval Norsemen began by girdling the trees (that is, cutting through the bark and the cambium at the base of the tree) which then died slowly. Pines have the property of endeavouring to combat disease by generating resin and as the girdled tree slowly dies it manufacturers large quantities of resin and becomes virtually saturated.

Such "resin-impregnated" logs are very resistant to decay. After the tree was felled it had all the sap wood hacked off and was left to season for a year. Naturally this practice is no longer followed in modern Norwegian log houses, but the other points I shall enumerate are almost exactly copied to this day, or rather to just before the war, as Norway has no timber to spare for log houses now.

Elaborate precautions were taken to exclude damp, by using the very durable and moisture-resistant birch bark damp proof courses (in several layers) and flashings and by providing drips and weatherings.

It was not necessary to have a d.p.c. in the granite rubble foundations constructed dry, as there was no capillary path, and good sub-floor height and ventilation were provided.

Everywhere provision was made for settlement as the logs dried out and shrunk over the years. Thus moss-packed settlement spaces were provided round window and door frames, partition walls were fixed in "grooves" and chimneys passed through holes

in the roof with ample birch bark flashings arranged to cope with relative movement.

The thermal insulation of buildings is not a novel conception as floors were insulated with dry turf or sawdust and roofs with several layers of turf turned upside down (green turf was laid on the top to grow and bind the roof covering).

To-day with inferior untreated softwoods we should at least take as much trouble with our building timbers.

When timber is built into a building structure in places where it may be wetted by rain, or where it may be exposed to damp air for long periods or where it may come into contact with wet masonry or plaster the golden rule is to protect the timber from the wet as well as possible, or if that is impossible to see that it gets every opportunity of drying out again after it has been wetted. Remember also that timber is never still; it is always on the move, striving to shrink, swell and change shape as it accommodates itself to the surrounding air.

Space does not permit examining all the common examples of timber construction in relation to the points I have enumerated, but let us take the case of a wooden casement window and see what precautions *ought* to be taken.

Now the outer face of the window will be wetted at intervals, but has a good chance to dry out again and moreover it will generally be protected by paint which sheds the free water and retards the passage of water vapour. But the joints may open, splits and cracks develop under hot sunshine and thereby provide access for rain. These openings may then close again, thus trapping moisture within the wood. The only means of preventing this sort of thing is proper seasoning before assembly and erection.

But what of the sides and backs of window frames? They generally receive no protective treatment other than a priming coat of paint, they abut wet mortar and brickwork—materials which do not shrink and swell in the same way as wood, they may be banged and scored by masonry in the course of building and the frame as a whole may have to serve as formwork for masonry, as supports for scaffolding or even take appreciable permanent loads if any settlement occurs.

In some parts of the country it is customary to leave the backs and sides of windows and door frames unpainted "to allow the timber to breathe". There might be some reason for this practice if the timber was very wet, but it must be realised that it will breathe in as well as out as dry timber will certainly do.

It is probable that sooner or later moisture will get behind the frames and will not readily dry out again. Clearly good practice demands one of two things in addition to the use of seasoned timber; either the backs must be properly painted or the frames must be bedded or pointed in non-hardening mastic so that water cannot enter.

I have heard it said over and over again "But we have never done these things and we have never had any cases of rot in window frames." Even if these statements are really true—and it is almost impossible to check them—we are to-day facing an utterly different position. The timber contains more sapwood and is cut for the most part from smaller trees. The former means a higher proportion of timber very susceptible to decay and the latter means a greater danger of warp and distortion leading to the formation of cracks and crevices.

Behaviour of structural and joinery timber under normal conditions of service

I must pass on to what happens to timber in buildings, year in and year out, as the seasons change. As I mentioned above, movement and moisture content change, the former being caused by the latter, must always occur with timber which is in contact with the atmosphere. Protective devices such as paint and polish only retard the ingress and egress of moisture vapour, though they may be quite effective in stopping liquid water. It is not known precisely how much many ordinary timber components will change in moisture content throughout the year, but it is known that conditions exist in buildings which would result in very large changes in moisture content if the timber had time to respond to these conditions completely. The actual changes that do occur are being investigated by the Forest Products Research Laboratory in a series of experiments proceeding continuously.

There is some information of a general character, however, and from this we can deduce, with sufficient accuracy to cover the points I wish to make now, that timber in buildings not affected appreciably by winter heating will settle down at an average moisture content of about 17% fluctuating up and down by about 3% in winter and summer. Thus, ideally, carcassing timber should be seasoned to around 17% before installation. Interior joinery subject to centrally heated air in winter will settle down at about 12% moisture content, (Figure 1) going up to about 14% at the end of summer and down to about 10% at the end of the heating season. Ideally, then, joinery timber for internal use in centrally heated buildings should be seasoned to 12%.

Internal joinery in ordinary houses not centrally heated tends to settle down at a mean moisture content of something above 12% and may be nearer 14%. The range is then somewhat smaller and in the case of buildings with very inadequate heating the timber may be actually wetter in winter than in summer.

It will be noted from Figure 1 that timber which is out of doors, but under cover, has a mean moisture content of about 20% and fluctuates between about 23% in the winter and 17% in the summer. No building timbers, if we except things like yard doors and porches are subject to quite these conditions, but there

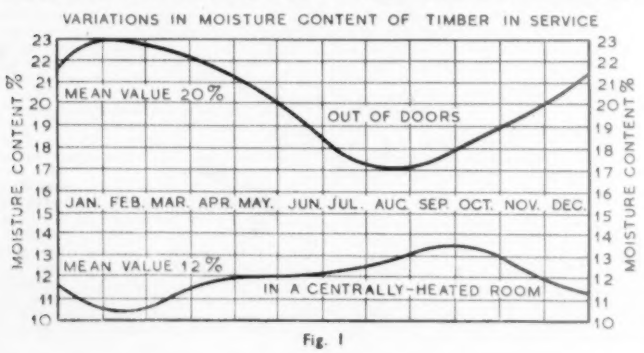
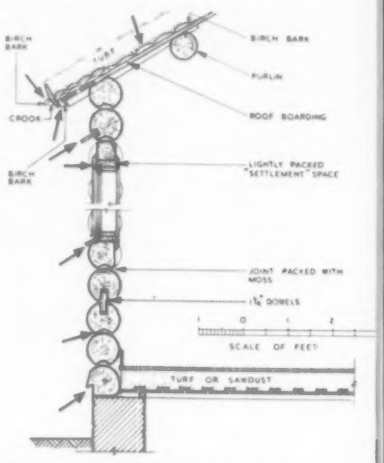


Fig. 1



Construction of log house with turf roof from "Houses of Wood." Thesis by R. G. Bateson.

are components like windows, exterior doors and ground flooring which are partially in contact with outside air and partly with inside air. One must assume, until we have definite evidence to prove otherwise, that they settle down at 14% to 16% moisture content.

Now I said earlier, when referring to the need to ensure that only timber seasoned to more or less the right moisture content was used in building that the aim was to get somewhere near the right figure. In the case of softwoods for carcassing a moisture content below about 22% is generally suitable, and for internal joinery the figure should be below about 16% and for external joinery below about 18%. If somewhat lower so much the better. With present day quality softwood it would be unwise to accept higher moisture contents.

It is argued—generally by those who would have to bear the extra cost of further seasoning—that it is silly to dry out the timber to the moisture content it will ultimately attain, if it is to be in contact with wet masonry and damp conditions generally during building operations. I cannot accept this point of view, because I believe that some temporary swelling of the timber is better than permanent shrinkage and components manufactured at the right moisture content are more likely to return to their proper shape on drying out again than those that are made from too wet timber which will inevitably dry out sooner or later.

It should be remembered too that much of the wetting during building operations is of a superficial nature only and will have little influence on the inner portions of the heavier sections.

I have referred to the seasonal fluctuation in moisture content. What of the seasonal change in dimension and shape?

As a very general guide one may take it that wood shrinks or swells .03 in. per foot of width across the grain for every one per cent. change in moisture content if unrestrained. Usually of course some restraint occurs in swelling if not in shrinking. It will be seen that movements of plus and minus about $\frac{1}{32}$" will occur in comparatively small sections like 3×4s. These and bigger movements do in fact occur and go on repeating year after year, sometimes becoming greater, sometimes smaller, depending on the wetness or dryness of the season, the degree of heat applied in winter and so on.

It is as well to remember that this movement is going on all the time and to allow for it in

design, in relation to adjoining materials, in provision for maintenance, etc., etc.

Causes of deterioration and decay under normal and adverse conditions of exposure

Apart from fire and mechanical agencies the only important enemies that timber has are the wood destroying fungi and the wood boring beetles. In a properly built building which has not become damaged in any way and where ordinary maintenance is kept up the fungal decay enemy can be ignored. The beetle enemy may attack, however, if, flying in the vicinity or introduced in furniture it finds timber to its liking in an exposed condition.

A comparative newcomer to this country is the house longhorn beetle (*Hylotrupes bagulus. L.*) which has recently attacked roof timbers in a number of houses. The larva of the beetle bores in the sapwood of softwoods. Many years may elapse before the larvae pupate and emerge as beetles, and as roof spaces are often unvisited for long periods it has happened that serious structural damage has occurred in rafters, purlins and tiling battens before the attack was noticed.

However, generally speaking the danger is very slight, and if detected early on the wood borers can usually be eliminated without much trouble and expense by liberal applications of insecticides.

If a building is improperly built—and by that I include the employment of insufficiently seasoned timber in certain uses—or if damage to damp courses occurs or maintenance is neglected the danger from dry rot is very great indeed.

The question of dry rot is too big to deal with here, but I will just put in the reminder that timber which remains above 20% moisture or so for any length of time is liable to attack and almost certainly will be attacked sooner or later since fungus spores are everywhere, carried by the wind in their millions. The deadly dry rot fungus, *Merulius Lacrymans*, the weeping fungus, once established manufactures its own water supply so that it is not enough to stop the source of damp. It needs some warmth for rapid development, however, and it cannot stand high temperatures such as direct summer sunshine, so it is not often found in exterior joinery, but is frequently found in wall plates, floor joists, boards, skirtings, architraves, staircases, lathing, etc.

If active dry rot is found, a piece of the infected timber should be posted to the Forest Products Research Laboratory at Princes Risborough, to get the species of fungus identified. The laboratory will advise on what to do, which will depend very much on the type of fungus found to be responsible. It may not be a dry rot or it may be a rotting fungus that will die off if the cause of damp is eradicated.

Methods of protection and preservation

All good builders will want to know of ways of preventing decay. I have dealt with some already such as the use of seasoned timber only and the exclusion of moisture. There are however, some applications of timber to building where one cannot be certain that dry conditions will be maintained, or that temporary wetting may not start trouble before the building has had a chance to dry out.

A brush or dip treatment with a wood preservative of the tar oil or spirit solvent variety will give temporary protection to wall plates, and joists in contact with masonry, ground floor joists, and plates, backs of windows and door frames, etc., but for long term protection under damp conditions it is important to employ pressure treated timber. In practice this means that the choice will lie between tar oil preservatives of which creosote is the best known and water soluble salts. The latter type would be selected if it is desired to paint the timber. Backyard impregnation is possible in the case of small pieces or the end of joists, etc., with the aid of the hot and cold open tank process, but all major impregnations must be done by experts in proper pressure plant. There are many such plants available throughout the country, and considerable stocks of treated timber are available.

Some ways of economising softwood in building construction

Finally I should like to conclude with some observations on the very pertinent topic of economising the amount of softwoods used in building. Of all the building materials used to-day softwood is the most scarce commodity available in this country.

It will be seen from Figure 2 that, for instance, a $1\frac{1}{2}" \times 8"$ joist has approximately the same load bearing capacity as the traditional $2" \times 7"$ yet the saving of timber is in the ratio of 12 to 14, or 14%. On an ordinary small house first floor this means a saving of 12 cubic feet of timber.

On a clear span of 11'—6" the spacing could be 18" centre to centre and 7" Nom. T. & G. flooring could be used instead of the traditional 1" Nom., saving 5 cu. ft.

If it is preferred to use 16" joist centres to suit 4 ft. plaster board, the same size joists would have to be used, but $\frac{3}{4}"$ Nom. T. & G. flooring could be used instead of the normal 1" Nom. thereby saving 10 cu. ft. on the floor boards. These straightforward design alterations save .13 of a standard or 8% of the present total softwood allocation for a small house.

Nominal Thickness	*Minimum Finished Thickness*	*Maximum Distance Between Centres of Supports (T. & G. Boarding)*
Inches	Inches	
[illegible]	9/16	16 inches
[illegible]	11/16	20 inches
1	13/16	24 inches

From Ministry of Works Economy Memorandum "Use of Timber in all Building Work" (Revised 1949).

TABLE I. FLOOR BOARDS

In Figure 3 two methods of small house roof construction are shown. There is nothing revolutionary about these, except that the pitches have been reduced slightly below traditional, adopting the recommendations of the Ministry of Works Timber Economy Memorandum. The reduction in pitch has the dual advantage of saving some timber in rafter lengths and bringing the ordinary small house rafter length down to 16 feet.

As is well known, lengths over 16 feet are very difficult to obtain at the present time.

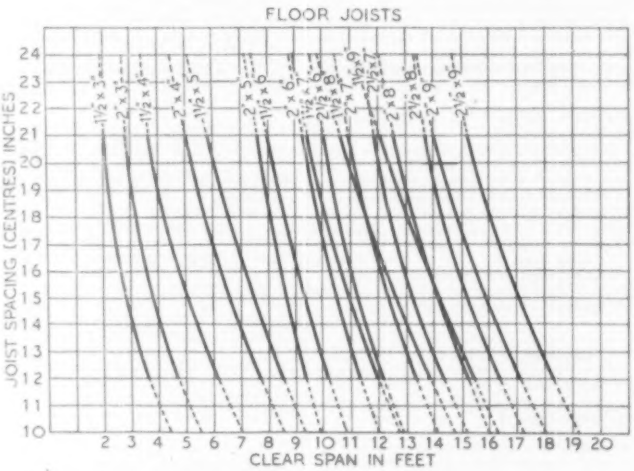
The other points are common-sense engineering ones. Thus the struts are carried on load bearing partitions of spine walls and not, as one so often finds, on the ceiling joists. By hanging each ceiling joist from the purlins the span is halved and much lighter sections can be employed than with the traditional construction where a binder is supposed to halve it.

Table 2 shows the economies effected in Roof Timbers by adopting the above measures, as compared with the post-war traditional roof where, for instance, $2" \times 3"$ rafters at 18" centres have been employed. The saving over the pre-war type roof where $2" \times 4"$ rafters at 14" or 16" centres might have been used is, of course, correspondingly greater.

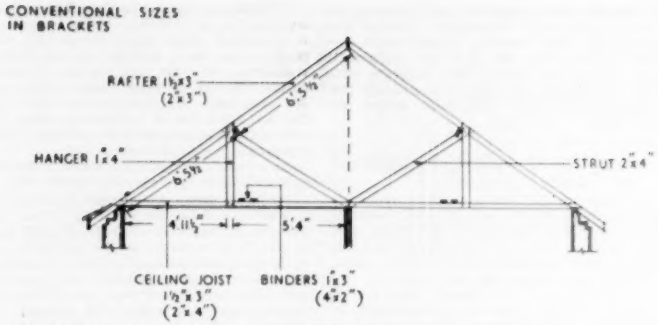
Proper design methods based on the latest recommendations as set out in the Ministry of Works Timber Economy Memorandum result in a saving of 22 cubic feet or 0.134 standards for plain tile roofs, and a saving of 39.3 cubic feet or 0.238 standards when the lighter single-lap interlocking tiles are employed.

I am often asked whether these suggestions have been accepted by local authorities. The answer is that many local authorities are now adopting these ideas and many more will doubtless do so in order that more houses may be built from the limited amount of softwood available.

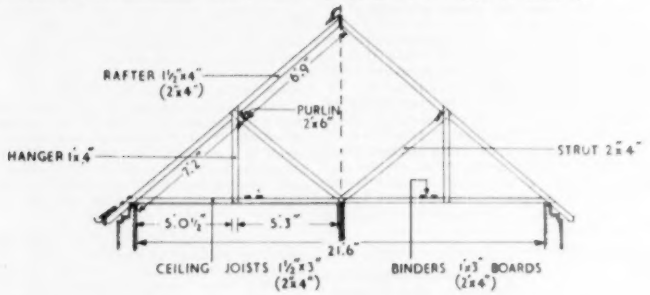
I am also frequently asked whether there is sufficient experience, apart from laboratory tests, to be sure that in the long run buildings constructed on the lines put forward will endure as well as traditionally built structures. This question cannot be answered in the affirmative as yet because many of the ideas put forward are only recent in application and it remains to be seen whether the more rightly stressed members will eventually



Floor joists. Curves showing relation between joist centres and maximum clear span for standard sizes. Assumptions: Span exceeding 8 ft.—6 lb. sq.ft. dead load, plus 30 lb. sq. ft. superimposed load; Span not exceeding 8 ft.—6 lb. sq. ft. dead load, plus 20 lb. ft. width of floor uniformly distributed over the span. (Based on Table in Ministry of Works Economy Memorandum—Use of Timber in all Building Work). **Fig. 2.**



ECONOMICAL ROOF CONSTRUCTION 35° PITCH FOR SINGLE-LAP INTERLOCKING TILES FROM "THE ECONOMY OF TIMBER IN BUILDING"



ECONOMICAL ROOF CONSTRUCTION 40° PITCH FOR SLATES OR PLAIN TILES FROM "THE ECONOMY OF TIMBER IN BUILDING"

tend to deflect unduly with time and under the exigencies of service.

Unless decay sets in, when admittedly there is less margin of safety than with larger sections, it is extremely unlikely that any risk is involved as prolonged testing by the Forest Products Research Laboratory of full scale structures under loads materially exceeding loading likely to be met in service has demonstrated that the roof trusses illustrated, for instance, are stronger and stiffer than traditional designs.

Nevertheless it would be idle to assert that there are not any unforseen circumstances which might lead to failure or partial failure here and there.

It is felt, however, that under present conditions of timber supply and the urgent need for more houses the slight risk of unsatisfactory performance over the years in isolated cases is one that should be taken.

Conclusion

I have endeavoured to give an idea of some modern scientific and practical developments in the use of timber in building and I realise that while much of what I have said may be nothing new, I realise too that some of the views I have put forward will be regarded as revolutionary and perhaps shocking as compared with pre-war practice. I know also that recommendations, like those I have given in regard to the seasoning of building timbers, are often difficult or even impossible to put into practice to-day, but it is right, I believe, that research results should be known so that when conditions make it possible and practicable to apply such results the necessary knowledge will already have been made available.

Item	*Typical Post-War Traditional Design*		*Economy Designs*			
			40 deg. Pitch for Plain Tiles		*35 deg. Pitch for single-laid Interlocking Tiles*	
	Sizes	*Cubic Feet*	*Sizes*	*Cubic Feet*	*Sizes*	*Cubic Feet*
Ceiling Joists and Beams	2"×4"	20.5	1½"×3" & 2"×5"	12.6	1½"×3" & 2"×5"	12.6
Rafters	2"×3", 2"×4" and 1½"×7"	24.9	2"×3" & 2"×4"	20.3	1½"×3" & 2"×3"	14.4
Tiling Battens	¾"×1½"	17.3	1"×1"	15.0	¾"×1½"	6.8
Other Items	—	22.9	—	17.6	—	16.1
Waste 10%		8.6		6.6		5.0
Total	C.ft. 0.571 Standard	94.2	C.Ft. 0.437	72.1 Standard	C.Ft. 0.333	54.9 Standard
	Saving on Typical Design		0.134	Standard	0.238	Standard

TABLE 2. ROOF TIMBERS

REFERENCES:

Ministry of Works Economy Memorandum—Use of Timber in all Building Work. Timber No. 2.S.O. Code No. 70-610, H.M.S.O. 1949. Price 6d. net.

Ministry of Health Circular 100/49. Timber for Housing—Economy in the Use of Softwood, etc. November 11, 1949.

Bateson, R. G., The Economy of Timber in Building. Crosby Lockwood. 1948.

National Smoke Abatement Conference, Margate, 1950

Views of the Coal Utilisation Joint Council

Speaking at the Annual Conference of the National Smoke Abatement Society at Margate last week, Mr. J. S. Williams, Director of the Coal Utilisation Joint Council, said that his Council supported wholeheartedly the smoke abatement campaign, but considered, that a note of warning should be sounded lest the smokeless zone movement outran the fuel supply situation.

Of a total domestic consumption of some 35 millions tons of solid fuel a year, only 6 million tons was at present smokeless solid fuel, and the remainder was bituminous coal. The C.U.J.C. had been given to understand that for the next five years or so, there would be little hope of additional supplies of the natural smokeless fuels, such as anthracite and dry steam coal. This increase could make no appreciable contribution to replacing entirely the 29 million tons of bituminous coal at present used in the home.

The ultimate solution to the problem of domestic smoke abatement lay in the direction of the progressive development of appliances capable of burning bituminous coal with less and less smoke. The evidence available at the present stage of research, however, was that the burning of bituminous coal completely smokelessly in the open grate, which was the crux of the problem, was not likely to be achieved for many years.

The Council's view was that if the present supplies of solid smokeless fuels were to be used to the best advantage in the interest of smoke abatement, it would be better if certain of the new towns or redevelopment areas declared their intention of being "cleaner air" zones.

In other areas the Council suggested that the right line to follow would be for the local authority to accept initially a less stringent standard than the absolute smokelessness required under the present Corporation Acts. An advancing programme by which the better and cleaner appliances which were now available were widely installed, would secure an ever increasing measure of smoke reduction over the country as a whole, and this, in the view of the C.U.J.C., would be a much more practicable contribution to the problem of smoke abatement than the piecemeal introduction of a number of isolated smokeless zones with all their attendant difficulties of fuel supply.

BUILDING NOTES

THE IMPORTANCE OF THE FOREMEN in industry as a link between the management and the worker was stressed by Mr. D. E. Woodbine Parish in his introductory address to the Building Foremanship Discussion Group meetings at Sheffield College of Technology. Mr. Parish recommended some study of the work and publications of the British Institute of Management.

He referred to the qualities demanded of the foreman as technical knowledge, leadership, high standard of moral integrity and a sense of responsibility and duties.

Summing up the foreman's duties Mr. Woodbine Parish said that the foreman must understand the management of men under which heading could be included the issuing of instructions, delegation of responsibility, discipline and good time-keeping, maintenance of good working conditions, establishment of fair and impartial decisions, the prompt and patient settlement of grievances, the prevention of accidents, the administration of reproof and giving of credit.

The development of technique also requires attention in the prevention of waste; the use of machinery, improving methods; training of personnel in new methods; the training of apprentices; study of research reports and current development.

The speaker appealed to foremen and management to select and promote suitably qualified men into higher posts in order that their capacities could be fully utilised.

Further meetings will be held every Wednesday evening at 7 o'clock in the Department of Building at Sheffield until March 7.

*

THE BUILDING APPRENTICESHIP AND TRAINING COUNCIL announce that recommendations for award of prizes in respect of Craft Apprentices registered with the B.A.T.C. should be forwarded to the B.A.T.C. Lambeth Bridge House, London, S.E.1, by October 31. No applications can be accepted direct from apprentices. In case of doubt recommending bodies should inspect the apprentices' blue registration card.

*

THE IRON AND STEEL CORPORATION of Great Britain announces that it has appointed Mr. S. S. Wilson to be its Secretary. Since 1948 Mr. Wilson has been an Under Secretary in the Ministry of Supply.

*

A SUMMARY OF IMPORT LICENSING REGULATIONS has been published by the Board of Trade.

Traders not already receiving Notices to Importers may obtain a copy of this summary upon application to the Import Licensing Branch, Board of Trade, Romney House, Tufton Street, London, S.W.1. An addressed envelope, size not less than 9" × 3", must accompany the application.

*

TO ENCOURAGE A SENSE OF PRIDE in achievement, Coventry City Council have agreed with Higgs & Hill Ltd., now building Block "B"—the first of the city's permanent buildings in the new city centre—that the initials of all builders working satisfactorily for twelve months or more shall be carved in stone on the building.

*

THE GOVERNMENT OF THE REPUBLIC of Ireland have amended the Control of Building Order. Henceforward it will not be necessary to obtain a licence under the Order for the erection of a house the floor area of which is not more than 1,400 square feet.

Building licences are required to authorise any other building operation costing more than £500 or involving the use of building materials costing more than £250.

The previous limit was 1,250 square feet.

This relaxation brings the law into line with the limits approved for subsidies for dwelling houses.

*

THE COUNCIL OF THE BRITISH WELDING RESEARCH ASSOCIATION have awarded the 1949 Welding Research Prize of £100 to Dr. K. Winterton, Mr. J. G. Ball and Mr. C. L. M. Cottrell for their joint paper entitled "A New Weldability Test for Magnesium Alloy Sheet." The prize has been given by the British Oxygen Co. Ltd.

The closing date for entries for the 1950 competition is extended to December 31, 1950. A single prize of £100 is offered for the best paper on research into welding or its applications. Full details relating to this competition can be obtained from the Secretary, B.W.R.A., 29 Park Crescent, London, W.1.

*

THE DIRECTORS OF THOMAS W. WARD LIMITED are to recommend a Final Dividend of 10% less tax, on the Ordinary Share Capital of the Company, making with the Interim Dividend of 5%, less tax, already paid, 15%, less tax, for the year ended June 30, 1950.

*

EIGHT LECTURES ON WELDED STEEL STRUCTURES will be given at S.E. London Technical College, Lewisham Way, S.E.4., on Tuesdays at 7 p.m. to 9 p.m., commencing on Tuesday, October 24, 1950. The lectures are intended for Civil, Structural and Constructional Engineers, Designers and Draughtsmen, etc., and will be of an advanced character.

Applicants for the course should be suitably qualified by a degree, higher national certificate, or membership of a professional Institute or possess sufficient professional experience in design practice.

The main topics of the lectures include: Methods of welding used in structural steelwork; stress distribution in various types of welds; working stresses in various types of welds; design of typical details such as beam connections, column splices, stanchion brackets, sway bracing; effect of end fixity on beams and columns; site welding and erection; design of built-up beams, etc.; reconstruction and extension to existing steel structures.

Enrolment forms may be obtained on application to the Head of the Department, and should be completed, if possible, before the date of the first lecture. The fee for the course is £1 15s. 0d.

*

TO MEET THE NEED for adequate servicing and showroom arrangements for solid fuel appliances and for a full technical advisory service, the Coal Utilisation Joint Council is establishing a Service and Showroom Scheme throughout the country through existing distributors of solid fuel equipment.

Panels of approved distributors of domestic appliances are operating throughout most of the country, and the scheme will be extended to the South-West and to Scotland early in 1951. The Midlands Regional Panel is now complete and covers Staffordshire, Warwickshire, Shropshire, Worcestershire, Herefordshire, and Gloucestershire.

Approved distributors will display a distinctive sign and be supplied with descriptive literature, posters, etc. Full details of the Scheme will be publicised in the Press throughout the Region.

*

Mr. E. P. LAWRENCE, Director and General Manager of The Merchant Trading Company Limited, has tendered his resignation operative from September 30, 1950. His duties have been assumed by Mr. Kenneth R. Slade, who has been associated with the Company since its inception.

The steel framework on the Shot Tower at the Southbank Festival Site is to carry a radar beacon. The beam is directed at the moon. Visitors—whether moonstruck or not — will not be allowed up the Tower.

MR. RICHARD STOKES, M.P., Minister of Works, will be among the guests at the luncheon which the London Master Builders Association is giving to the Lord Mayor, Alderman Sir Frederick Rowland, in the Savoy Hotel, on Wednesday, October 25. The President of the L.M.B.A., Mr. R. R. Costain, C.B.E., will preside.

Among those who have accepted invitations are the Mayor of Westminster, the Leader of the L.C.C., the Chief Architect, the Secretary, Deputy-Secretary and Under-Secretary of the Ministry of Health; the Permanent-Secretary and Deputy-Secretary of the Ministry of Works; the Permanent-Secretary and Deputy-Secretary of the Ministry of Labour; and the Permanent-Secretary and Deputy-Secretary of the Ministry of Town and Country Planning. The President and Secretary of the R.I.B.A. and the R.I.C.S.; the President and Director of the National Federation of Building Trades' Employers, and of the Scottish National Building Trades Federation; the Secretary of the National Federation of Building Trades Operatives and the Secretary of its London Region; the Chairman and Secretary of the Central Land Board; and the Masters and Clerks of the Worshipful Companies of Carpenters and Masons.

*

THE MINISTRY OF SUPPLY announces that from Monday, October 9, the price of virgin aluminium in ingot form is increased from £112 to £120 per long ton delivered into consumers' works. The price change is due to the freeing of the Canadian dollar exchange rate and its subsequent appreciation in terms of sterling. For metal in notch bar form there will be an addition of £2 10s. a ton as at present.

The new price will apply to metal of a purity of 99% to 99·5% inclusive. There will be no change in the premiums to be paid for high purities.

*

FEBRUARY 15, 1951, will be the general date of transfer to the Iron and Steel Corporation of the securities of the 92 specified companies under the Iron and Steel Act 1949.

The Act provides that the securities shall vest in the Corporation on January 1, 1951, or such date not more than twelve months later as the Minister may by Order substitute. The Minister has, after consultation with the Corporation, made an Order substituting February 15, 1951, for the date in the Act. Copies of the Order may be obtained from the Ministry of Supply, Shell Mex House, Strand, London, W.C.2.

FACTORY at YMUIDEN

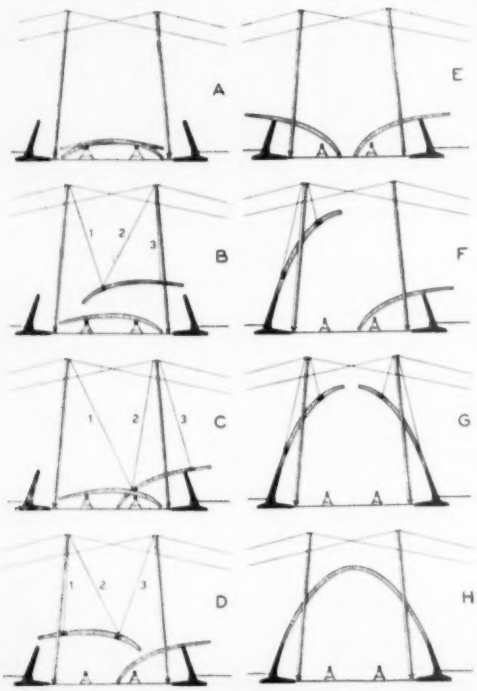
Architects: Koninklijke

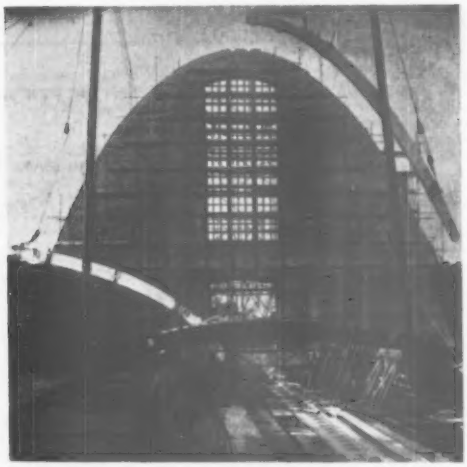
Illustrations on this page show the method of raising and fixing the parabolic roof members for a nitrate factory storehouse building in Ymuiden, Holland.

The base and end walls (the latter brick faced externally) are of reinforced concrete as are the roof members. The 32 arch members weigh nearly one and a half tons each. The bottom photograph shows the construction of the apex joint. Through the gap the remaining arch members are seen stacked ready for hoisting in a series of movements illustrated in the drawing below.

The centre picture shows the purlin sockets cast with each arch member and the projecting bolts for fixing the corrugated sheet roofing.

In the picture above note the twenty down pipes from the concrete gutter.





CURRENT MARKET PRICES (LONDON)

(These prices apply to material purchased in the quantities named or otherwise as might be expected for a new building of medium size.)

AGGREGATES AND SAND

1½ inch—all in—ballast	16/4	Yard cube
¾ inch do. do.	18/6	delivered
¾ inch screened shingle	14/5	(in five yard
¾ inch do. do.	15/5	loads or
¼ inch granite chippings	55/-	more)
Sharp washed sand	16/9	
Pit sand	16/2	
Building sand	16/2	
Broken brick	17/6	
1½ inch shingle	13/7	
Cartage of muck	6/-	

CEMENTS, LIMES, PLASTERS, ETC.

London: Delivered centrally. Per ton.

CEMENTS—Portland (6 ton loads)	65/-	Paper bags charged 9/6 per ton extra.
Do. (but 1 ton to 5 tons 19 cwts.	70/-	
Do.—Rapid hardening (6 ton loads)	71/-	
Do.—Do. (but in 1 ton to 5 tons 19 cwts.)	76/-	
Do.—"Aquacrete" (but in 1 ton to 5 tons 19 cwts.)	101/6	
Do.—"417" or Polar (1 ton to 5 tons 19 cwts)	92/6	Do. 9/6 per ton extra.
Do.—White (1 ton lots)	237/-	Bags free.
Keenes Cement—pink—coarse (1 ton to 1 ton 19 cwts.)	166/9	do.
Do.—white—coarse (do.)	172/3	do.

LIME—	95/6	(1 ton loads) delivered.
Hydrated	95/6	(2/3 do.) do.
and	87/-	(4/5 do.) do.
Ground	86/-	(6 do.) do.

PLASTER—	Price	unit	bags	
Sirapite, coarse	115/6	per ton	included	delivered
Do. finish	123/6	do.	do.	do.
Hardwall	129/6	do.	do.	do.
Plaster, pink coarse	117/-	do.	do.	do.
Do. white do.	125/-	do.	do.	do.
Lime and hair	72/6	per yard cube	-	do.
Plaster baseboard	1/10	yard super (150 Yds.)		do.

FIRECLAY—		
Stourbridge, loose (1 Ton lots)	126/6	Ton delivered
Fire putty	50/-	per cwt.

BRICKS

BACKING BRICKS (In truck loads)—		
Flettons	90/-	per 1,000 delivered
Do. Keyed	92/-	do.
Do. bullnose	110/-	do.
Blue wirecuts	373/-	do.
Sandlime or Common White	90/-	do.
Southwater engineering (No. 1)	253/6	do.
Firebricks—2½ inch	50/-	per 100 delivered
Do. —3 inch	58/6	do.
STOCK BRICKS—		
Mild stocks	150/-	per 1,000 at Works
Second do.	175/-	do.
First do.	185/-	do.
Add for delivery—approx. 40/- per 1,000 in lorry loads.		
FACINGS—		
Rustics	110/-	per 1,000 delivered
White	136/-	do.
Blue pressed, 2½ in.	414/6	do.
Do. bullnose	427/6	do.
Reds	280/-	do.
White glazed stretchers	1082/-	do.
Do. headers	1069/-	do.
Do. bullnose	1347/-	do.
Do. double stretchers	1440/-	do.
Do. double headers	1307/-	do.
Breeze fixing bricks	18/3	per 100
Fire tiles and lumps	25/-	foot cube
Wall ties—8" × ⅞" × ⅛", black	50/-	per cwt.
Do. but galvanized	68/6	do.
Cement mortar (1 : 3) hand-made	65/-	yard cube

BRICKLAYERS' SUNDRIES—

AIR BRICKS		9×3 in.	9×6 in.	9×9 in.	12×9 in.
Iron	each	1/8	2/11	4/8	7/-
Galvanized do.	do.	2/7	4/2	6/10	12/5
Terra Cotta	do.	1/-	2/1	5/3	8/7
Chimney pots, Terra Cotta	do.	1 ft 5/8	2 ft. 9/10	3 ft. 22/2	4 ft. 38/3

PARTITIONS—

Per super yard.	Blocks keyed for plastering. Lorry load.	60 super yards load.	25 super yards load.
Solid clinker blocks, 18"×9"×2" thick	2/9	3/3	4/-
Do. but 2½" thick	3/3	3/9	4/8
Do. but 3" thick	3/9	4/3	5/6
Hollow clay blocks, 12"×9"×2" thick	3/3	4/3	4/8
Do. but 2½" thick	3/6	4/8	5/2
Do. but 3" thick	4/2	5/5	6/-
Half blocks, extra on above rates	2/-	2/6	2/6
Smooth in lieu of keyed face, extra per side, on above rates	2d.	3d.	3d.

SINKS—

Fireclay white glazed in and out—standard quality—

	24"×18"	30"×18"	30"×20"	36"×20"
London pattern, 6" deep	46/-	58/-	61/6	-
Belfast, do., 10" do.	61/-	92/6	122/6	147/-

Cantilever brackets 5/4 per pair.

GAS FLUE BLOCKS—

	Single Flues.	Double Flues	
Backing blocks	4/11	9/1	per set of three
Straight do.	2/2	3/8	each
Cover do.	3/2	5/8	do.
Raking do. 45 deg.	4/8	7/7	do.
Do. do. 60 deg.	3/6	5/3	do.
Offset block	5/10	8/7	do.
Closer do.	2/2	3/8	do.
Do. flashing do.	1/10	2/10	do.
Straight flashing do.	1/10	2/10	do.
Terminal and cap	11/10	15/7	per set
Middle do.	11/7	14/11	do.
End do.	11/10	15/6	do.
Corbel block	7/10	15/1	each

DRAINAGE GOODS

STANDARD LIST

SALT GLAZED SANITARY PIPES AND FITTINGS—

Best Quality	4 in.	6 in.	9 in.	
Pipes (2 ft. and under)	1/8	2/6	4/6	each
Bends and knuckles	2/6	3/9	6/9	do.
Single junctions and saddles	3/4	5/-	9/-	do.
Double collars	3/4	5/-	9/-	do.
Ordinary tapers	3/4	5/-	9/-	do.
Manhole interceptors	17/6	22/6	37/6	do.
Gullies (ordinary)	6/3	6/10½	11/3	do.
Extra on cost of last for horizontal inlets	1/6	1/6	1/6	do.
Do. vertical inlets	2/3	2/3	2/3	do.
Do. black iron grids	7½d.	1/0½	1/8	do.
Do. galvanized do.	1/0½	2/1	4/4½	do.
Do. stoneware do.	7½d.	1/0½	1/8	do.

These pipes are subject to the following adjustments according to quality and quantity: *Best* Quality in 2 ton lots—plus 35%. Ditto 100 pieces—plus 55%. Ditto less than 100 pieces—plus 65%.

British Standard are 7½% more cost than *Best* as above detailed. *Tested* pipes are 25% more cost respectively.

IRON DRAINAGE GOODS—

Controlled maximum prices.

Each	4 in.	6 in.
Cast iron pipes, 9 feet long	50/-	74/9
Do. 6 feet do.	36/8	58/10
Do. 4 feet do.	29/4	47/1
Do. 2 feet do.	118/	28/4
Short bend	1/81	24/2
Junction	20/5	41/11

CURRENT MARKET PRICES (Continued)

DRAINAGE GOODS—*Continued*

GULLEY PARTS—	4 in.	6 in.	
Traps, high level, invert.	20/6	51/3	each
Inlet, bellmouth pattern	13/–	21/–	do.
Do. with one vertical branch. . ..	19/3	33/6	do.
Do. with two do.	45/–	81/–	do.
Sealed cover, with felt washer	9/–	15/6	do.

RAINWATER SHOES—	4 in.	6 in.	
With vertical inlet and rebated top ..	23/6	61/6	each
Extension piece, 6 ins. high	14/3	14/3	do.
Flat loose coated grating	2/6	2/6	do.
Loose solid coated cover	4/5	4/5	do.

INSPECTION CHAMBERS—	4 in.	6 in.	
Without branch	56/–	74/–	each
Do., with one branch	72/–	102/–	do.
Do., with two branches	110/–	152/–	do.
Do., with three branches	136/–	195/–	do.
Do., with four branches	183/–	259/–	do.

BROWN GLAZED CHANNELS—

Based on standard list plus 65% (less than 100 pieces)

	4 in.	6 in.	9 in.
Half-round main channel (2 ft. long) ..	2/0½	3/1½	5/7
Extra for stop ends	2/0½	3/1½	5/7
Extra for outlets	2/5½	2/5½	2/5½
Channel bends with splayed ends ..	6/2½	9/3½	16/8½
Three-quarter section do.	8/3	12/4½	22/3½

MANHOLE COVERS—	Black	
24×18 in. Light foot traffic	22/3	each
Do. Strong do.	36/3	do.
Do. Light car traffic	71/9	do.
Do. Road traffic	113/–	do.

SUNDRIES—	Black	Galvanized	
Manhole steps	4/–	6/4	each
4 in. Mica valve fresh air inlets (L.C.C.)	–	14/3	do.
Plumber's hemp	–	6/–	per lb.
Gaskin, caulking	–	1/7	do.
Canvas backed hair felt, 4 in. wide ..	–	6*d.*	per ft. run

ROOFING MATERIALS

WELSH SLATES (delivered)— Size in inches	5,000 lots at per 1,000	500 lots at per 100	Under 100 at per doz.
22×11	1380/–	162/–	23/6
20×10	1150/–	135/–	19/6
18×10	900/–	105/–	15/3
16×8	615/–	72/3	10/6
14×9	520/–	61/3	9/–
14×4½	245/–	28/9	4/3

TILES (Broseley and Staffordshire)—	5,000 lots Per 1,000	Per 100
10½"×6½" Machine made	211/3	30/3
Do., hand made, sand faced..	244/7	34/9
Hips, valleys and angles	27/– per dozen	
	Per 1,000	Per 100
Plain concrete tiles	156/9	19/–

QUARRY TILES (delivered)—	½"×6"×6"	1¼"×8"×8"	
Plain	242/9	870/9	per 1,000
Sheeting asbestos corrugated, 3 in. pitch ..	3/10½		per yard super
Do. 6 in. do. ..	4/3½		do.
Sheeting iron galvanized corrugated	50/–		per cwt.
Sheeting zinc (1 to 2 Cwts.)	178/–		do.

ASBESTOS RAINWATER GOODS—

	2½ in.	3 in.	4 in.	6 in.	
Pipe in 6 ft. lengths ..	2/10	3/5	4/8	9/8	yd. lineal
Do. in 4 ft. or 3 ft. do. ..	4/3	5/1½	7/–	14/6	each
Shoes	1/9½	2/2	3/1½	7/8	do.
Branches	3/3	3/10½	5/4½	13/5	do.
Bends	2/1	2/7½	3/9	8/5	do.
Swannecks—6 in. projection	2/10	3/1½	4/6	9/11	do.
Pipe clips	1/4	1/4	2/4	2/8	do.

ASBESTOS O.G. GUTTERS AND FITTINGS—

	4 in.	5 in.	6 in.	8 in.	
In 6 ft lengths	2/7½	3/5	4/2	5/4½	yd. linea
In 4 ft. or 3 ft. do. ..	3/11½	5/1½	6/3	8/1	each
Angles and nozzles ..	2/2	2/10	3/5	4/2	do.
Stop ends	6½*d.*	9*d.*	10*d.*	1/2	do.
Drop ends	1/9½	2/0½	2/7½	3/6½	do.
Union clips	1/1	1/5½	1/9½	2/2½	do.

STONE

	Per foot cube
Whitbed Portland, building quality, at Nine Elms Station	6/4½
Do. Monumental quality do. ..	6/7½
Bath Stone, at Paddington or South Lambeth Stations ..	5/7

TIMBER (Changing in April)

In quantities less than £20 in value, add 20%.

Softwood.—Sawn.—Random lengths.

2"×9" of good quality.	Per standard.	Per foot cube.
Douglas fir (June, 1949)	£102½	12/5½
Swedish—redwood	£80	9/8½

	¾in.	1in.	1¼in.	1½in.
Plain edge unsorted flooring, 7 in. wide	58/3	76/–	95/–	114/–

See: The Imported Softwood Prices Order, 1949—No. 1079 for instructions, further details of sizes, qualities and prices.

SUNDRIES—

Felt, roofing and inodorous (best)	2/3½	yard super	
Do., inodorous, 2nd quality and sarking ..	1/7½	do.	
Do., sheathing, black	1/2½	do.	
Glue .. .. 1/8 per lb.	Glass paper ..	4/6	per quire
Nails: brads (2½") .. 47/2 cwt.	Cut clasps (2½")	48/9	per cwt.
Panel pins .. 9*d.* per lb.	Sash line, cotton (No. 8)	141/6	per gross
Wall boards ⅜" Insulating	3½*d.*	per sq. ft.	
Insulating, ½"	4½*d.*	per sq. ft.	
Hardboard: ⅛" .. 5½*d.*	and ¼" ..	7½*d.*	per sq. ft.
Slag wool	3/–	foot cube	

Wood screws: 1½" long—No. 8 size—per gross: Steel 2/7

Japanned round head 3/4. Brass 7/11. Brass round head 10/2

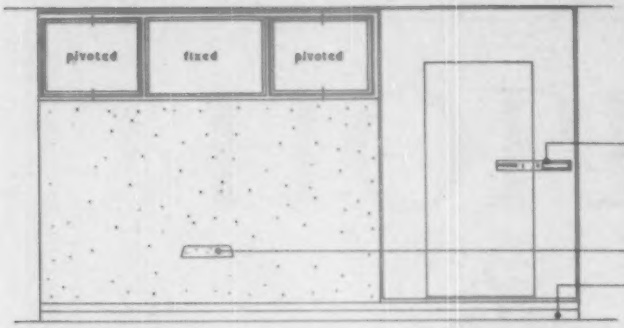
HARDWOOD—

	Per foot super.			
Prime	½ in.	¾ in.	1 in.	2 in.
Mahogany (African)	11*d.*	1/3½	1/6	3/2
Do. (Honduras)	1/5½	2/0½	2/3½	5/1
Oak (American), white—northern —plain, kiln dried	1/0½	1/5½	1/8	3/9
Do.—Quartered	1/1½	1/7	1/10	4/4
Do.—European—waney edge	11*d.*	1/3½	1/5	2/11
Teak—Burma and Siam 1st class	2/4	3/3	3/9	7/5
Walnut (African)	11*d.*	1/3½	1/6	3/2

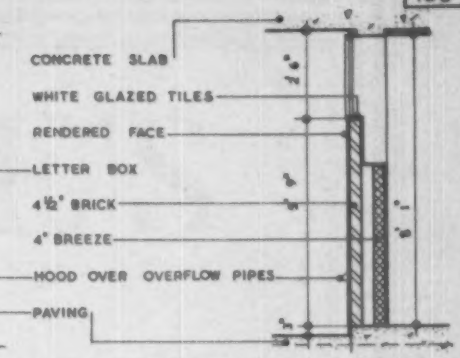
QUALITY, STANDARD SOFTWOOD DOORS.

1½ins., 4 Panels, horizontal, moulded both sides, in quantities of from 12 to 49.

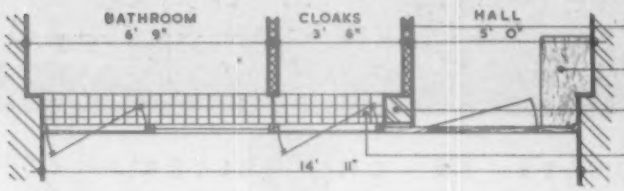
2' 9"×6' 6" at 55/6 each.	2 ins. do., but top panel open, with beads.		
2' 6"×6' 6" at 52/3 each.	2' 9"×6' 6" at 68/– each	2 ins. 3 panel, do. as last.	
2' 3"×6' 6" at 49/9 each.	2' 6"×6' 6" at 64/3 each.	2' 9"×6' 6" at 62/9 each.	2 ins., 2 panel ditto as last.
2' 0"×6' 6" at 47/3 each.		2' 6"×6' 6" at 60/3 each.	2' 9"×6' 6" at 57/– each.
			2' 6"×6' 6" at 54/– each.



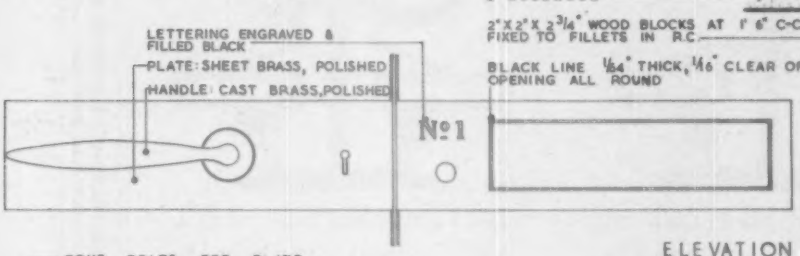
ELEVATION



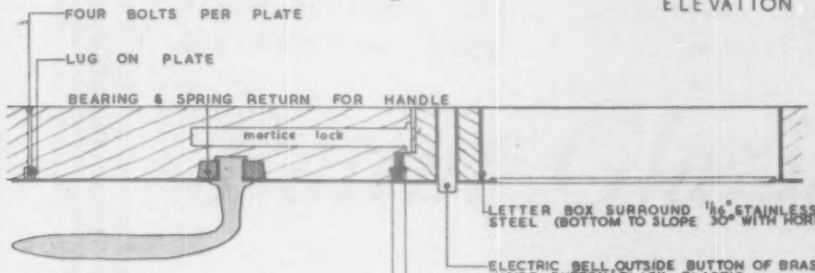
SECTION A-A



PLAN • 1/4" TO ONE FOOT

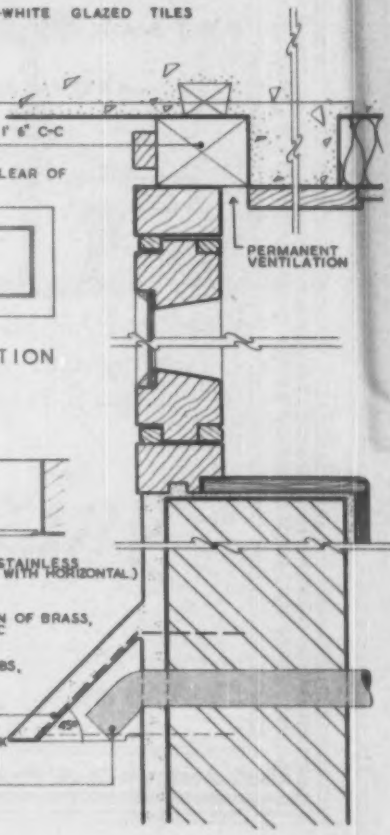

LETTERING ENGRAVED & FILLED BLACK
PLATE: SHEET BRASS, POLISHED
HANDLE: CAST BRASS, POLISHED
No1
BLACK LINE 1/64" THICK, 1/16" CLEAR OF OPENING ALL ROUND

ELEVATION



DOOR FURNITURE • PLAN

SCALE: QUARTER FULL SIZE

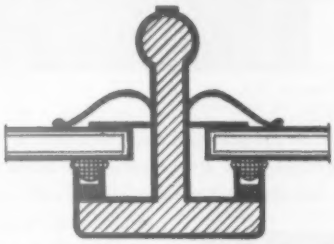

2" WOODWOOL
2"X2"X 2 3/4" WOOD BLOCKS AT 1' 6" C-C FIXED TO FILLETS IN R.C.
PERMANENT VENTILATION
LETTER BOX SURROUND 1/16" STAINLESS STEEL (BOTTOM TO SLOPE 30° WITH HORIZONTAL)
ELECTRIC BELL OUTSIDE BUTTON OF BRASS, INSIDE BUTTON BLACK PLASTIC
1/16" ALUMINIUM STRIP AT JAMBS, HEAD & SILL
EXPANDED METAL BENT TO FORM HOOD WITH SIDES AND TUCKED INTO BRICKWORK
45°
OVERFLOW PIPES

DETAILS • 1/4 FULL SIZE

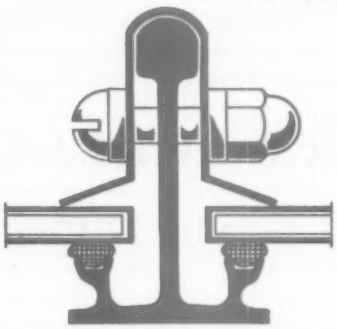
ENTRANCE, HOUSES IN CHICHESTER

ARCHITECTS: POWELL AND MOYA

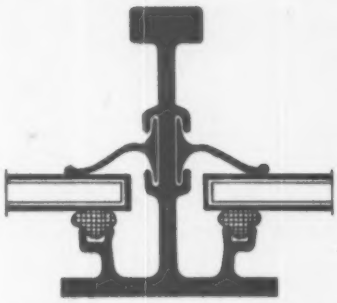
HOPE'S



THE ORIGINAL *Lead-clothed Steel Glazing Bar*
Permanent and Weathertight



THE ALTERNATIVE
Aluminium Glazing Bar with Aluminium Capping



A COMBINATION
Aluminium Glazing Bar with Lead Wings

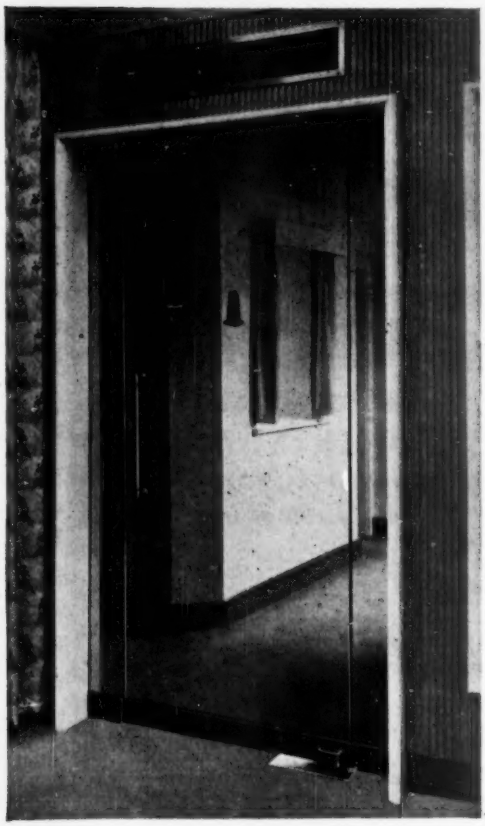
Patent Glazing

HENRY HOPE & SONS LTD.
Smethwick, Birmingham & 17 Berners St., London, W.1

The Unsuspected Showroom

A view of Regent Street from the Quadrant from a print published in 1828

In their advertisements, many old-fashioned tradesmen used to tell the public about "extensive and superbly appointed showrooms" and after expressing a desire to "be favoured with the esteemed commands" of potential customers, hid those showrooms behind mean, forbidding doors. For centuries the tradesman's shop was part of his private house; the shop door was a barrier, and remained so until after fifty years ago. To-day, the inside of the shop and its showrooms may be seen from the street, through large doors of sparkling, transparent "ARMOURPLATE" glass, that swing back at a touch to admit customers. Open up and brighten the shop and its showrooms with



"ARMOURPLATE" Glass Doors

Consult the Technical Sales and Service Department at St. Helens, Lancs., or Selwyn House, Cleveland Row, St. James's, London, S.W.1. Telephones: St. Helens 4001; Whitehall 5672-6.

Send for the "ARMOURPLATE" Glass doors booklet.

Supplies are available through the usual trade channels.

Showrooms of Messrs. C. & J. Clark Ltd., Street, Somerset.
Architects:
Messrs. Donald Hamilton, Wakefield & Partners, London, W.2.
Fixers:
Messrs. G. Parnall & Co. Ltd., Bristol.

BRITISH GLASS PB

PILKINGTON BROTHERS LIMITED

"ARMOURPLATE" is the registered trade mark of Pilkington Brothers Limited

CURRENT MARKET PRICES (*Continued*)

IRONMONGERY

	2in.	3in.	4in.	5in.	6in.
Cast iron Butts, .. per pair	10*d.*	1/4	2/1	3/8	5/5
Hinges, spring, single action regulating, japanned, .. each		6/–	8/3	11/–	13/9
Do. but double action spring only .. .. .. each		11/–	15/–	20/9	25/3
Do. blank only .. .. each		5/–	8/6	11/9	13/6

	12in.	18in.	24in.	30in.	36in.
Tee hinges (japanned) ..per pair	1/5	2/8	–	–	–
Do. but stronger .. ..per pair	1/11	3/8	5/8	–	–
Hook and Ride hinges ..per pair	–	–	10/3	12/6	19/3

BOLTS—each—	3in.	4in.	6in.	8in.	10in.	12in.
Cabinet, barrel, straight or necked	1/2	1/6	1/11			
Square spring, with brass knob	1/4	1/10	3/4			
Tower bolts		1/4	1/10	2/6	3/1	3/8
Barrel bolts		2/1	3/1	4/1	5/2	6/3
Add to Tower or Barrel bolts if necked		4*d.*	4*d.*	5*d.*	5*d.*	5*d.*

LOCKS—each—			
Rim lock, 2 lever, wrot case	9/7	Brass furniture	4/2
		or Bakelite do.	2/3
		Bakelite finger plates	1/8
Mortice lock, 2 lever, bushed	12/1	Brass furniture	6/6
		or Bakelite do.	2/10
Cylinder latches, japanned case	12/9		
Brass sash fastener		each	3/8
Casement fasteners (malleable)		do.	1/6
Do. stays (do.)		do.	2/–
Axle pullies (brass face, iron wheel)		each	2/1
Do. as last but with brass wheel		each	3/11
Sash line, No. 8 Anchor yellow label ..		per yard	10½*d.*

METAL GOODS

Basis—Rolled steel joists, all sections from 5″ × 4½″ to 16″ × 6″ inclusive (except 9″ × 7″, 10″ × 8″, 12″ × 7″ and 14″ × 8″) (over one ton)	£23. 10. 0	per ton
Extras—9″ × 7″ section..	5/–	do.
4″ × 4″, 5″ × 3″, 10″ × 8″, 12″ × 8″, 14″ × 8″ and 16″ × 8″ to 20″ × 7½″ sections inclusive ..	10/–	do.
22″ × 7″ section	15/–	do.
4″ × 2½″, 4″ × 3″, and 24″ × 7½″ sections	20/–	do.
Steel angles and tees	£24.0.0 and £25.0.0	do.
Steel bars (average ex mills)	£25.0.0	do.
Mild steel rods ⅜″ diameter and upwards, cut to lengths within the usual margin and bent to normal schedules for reinforcement	29/3	per cwt.
Extras per ton—		
⅜ in. and ½ in. diameter in size	15/–	per ton
⅝ in. do. do.	15/–	do.
¾ in. do. do.	30/–	do.
⅞ in. do. do.	45/–	do.
1 in. do. do.	60/–	do.
1¼ in. do. do.	90/–	do.
Extras for length—		
5 ft. to 3 ft.	7/6	do.
3 ft. to 2 ft.	15/–	do.
2 ft.	22/6	do.
40 ft. to 45 ft.	15/–	do.
45 ft. to 50 ft.	22/6	do.
Bolts and nuts	70/–	per cwt.
Trench covering, including trays 1½ in. deep and rebated frames, 9 in. wide	8/9	foot run
Do., but 12 in. wide	12/–	do.
Do., but 14 in. wide	13/–	do.
Do., but 18 in. wide	14/6	do.

METAL WINDOWS AND DOORS—

Steel casement doors and frames for glazing	7/6	foot super
Do. folding type	7/–	do.
Fireproof steel framed doors	28/–	do.
Strong room doors	60/–	do.
Strong room gates	25/–	do.
Steel casement windows and frames part opening	5/9	do.

CHAIN LINK FENCING—

In 25 yards lineal rolls inclusive of line wire.

2 in. mesh.	Height in inches— 36	42	48	60	72
10½ Wire gauge	71/4	83/4	95/3	118/6	142/9
12½ do.	50/3	53/7	67/–	83/9	100/6
14½ do.	35/10	41/10	47/10	59/10	71/9

DOUBLE SOOT DOORS AND FRAMES—

Fitted with brass turnbuckle and cast key ..	9in. × 9in. 14/–	12in. × 9in. 17/–	14in. × 12in. 24/6

SLIDING DOORS, GATES AND PARTITIONS—

Factory sliding doors in two leaves containing about 100 square feet with mild steel angle frames covered with 24 gauge corrugated galvanized sheeting and including hanging tubular track and gear complete	8/–	foot super
Factory entrance gates with mild steel frames clad with 2 in. mesh chain link complete	8/–	do.
Steel partitioning, glazed (rough cast) and stove enamelled	10/–	do.

STEEL ROOF LIGHTS—

Lanterns with vertical sides, and hipped roof, glazed with ¼ in. cast glass and lead flashed (180 ft. super or over, all surfaces measured)	10/6	foot super
Skylights of similar construction (180ft. super or over, all surfaces measured)	9/9	do

DOMESTIC BOILERS

For hot water or heating, for use with solid fuel, including base plates.

Gal. per hour from 40 to 140 deg.	Heating only direct radiation sq. feet	Black finish £ s. d.	Vitreous enamel finish £ s. d.	Vitreous enamel side jackets s. d.
20	–	5 12 3	6 16 3	10 0
20	55	7 11 0	9 19 9	11 3
25	70	8 16 0	11 4 6	13 6
40	110	13 18 8	16 17 0	16 0
49	120	11 2 6	–	–
66	170	13 16 8	–	–

Radiators for heating—3/– per sq. foot heating surface.

GAS, WATER AND STEAM TUBES

(From Standard List.)

Internal Diameter—	⅛in. & ¼in.	⅜in.	½in.	1in.	1¼in.	1½in.	2in.
Tubes .. ..per ft.	4*d.*	4½*d.*	5½*d.*	6½*d.*	9½*d.*	1/1	1/4½	1/10
Bends .. .. each	8*d.*	9*d.*	11*d.*	1/2	1/7½	2/7½	3/2	5/2
Elbows, square do.	10*d.*	11*d.*	1/1	1/3	1/6	2/2	2/7	4/3
Elbows, round do.	11*d.*	1/–	1/2	1/5	1/8	2/4	2/10	4/8
Tees .. .. do.	1/–	1/1	1/3	1/7	1/10	2/6	3/1	5/1
Crosses .. do.	2/2	2/4	2/9	3/3	4/1	5/6	6/7	10/8
Backnuts .. do.	2*d.*	2*d.*	3*d.*	3½*d.*	5*d.*	6*d.*	8*d.*	1/1
Sockets .. do.	3*d.*	3*d.*	4*d.*	5*d.*	6*d.*	8*d.*	10½*d.*	1/3
Sockets, diminished do.	4*d.*	5*d.*	6*d.*	7*d.*	9*d.*	1/–	1/4	2/–

DISCOUNTS OFF ABOVE

In random lengths and in quantity.

TUBE—

Class A (light)	−38½%	Black	−17% Galvanized
Class B (heavier)	−32½%	Do.	−12% do.
Class C (heaviest)	−22½%	Do.	+ 3% do.

FITTINGS—

Light weight	−12½%	Black	+ 2% Galvanized
Heavy do.	−5%	Do.	+ 7% do.

RAINWATER GOODS (Painted or Unpainted)

Rain water pipes, 6 ft. lengths,	2 in.	2½ in.	3 in.	3½ in.	4 in.	5 in.
per yard	2/8	2/9½	3/1½	3/6½	4/1½	5/4½
Shoes .. .. each	1/1½	1/3½	1/6	2/–	2/3	4/0½
Bends .. .. each	1/3½	1/6	1/10½	2/3	2/8½	4/10½
Heads .. .. each	1/10½	2/1½	2/6	3/0½	3/4½	6/0½
Offsets, 4½ in. projection each	1/7½	2/–	2/3	2/6½	3/3	5/7½
Do. 9 in. do. .. each	2/1½	2/4½	2/9½	3/6	4/2½	6/7½
Single junction .. each	2/11½	2/3½	2/9½	3/3	3/11½	6/3½
Half round gutters, 6 ft. lengths, per yard	–	–	1/3½	1/5	1/5½	1/10
Angles and nozzles .. each	–	–	1/0½	1/2½	1/3½	1/7½
Stop ends .. .. each	–	–	3½*d.*	3½*d.*	5½*d.*	7½*d.*
O.G gutters, 6ft. lengths per yd.	–	–	1/8½	1/10½	1/10½	2/5½
Angles and nozzles .. each	–	–	1/5½	1/5½	1/6	2/–
Stop ends .. .. each	–	–	4½*d.*	5½*d.*	6½*d.*	9*d.*

The above prices plus 75% added to foot of invoice.

CURRENT MARKET PRICES (*Continued*)

PLASTERING MATERIALS

Sand, lime, cements and various plasters are previously included under those heads—

Metal lathing (8″×24G.)	2/5 sq. yard
Plaster baseboard, ⅜″ (150 yds.)	1/10 do.
Plaster wallboard, ⅜″ (do.)	2/3 do.
Scrim, 2″ cotton (100 yds. roll)	5/3 per roll
Scrim, 3½″ jute (do.)	8/3 do.
Lath nails, galvanized	1/– lb.
Cow hair	84/6 per cwt.
White glazed tiles (6″×6″×¼″)	14/10 sq. yard
Do. rounded on one edge	17/11 do.
Do. on two adjoining edges	21/10 do.

PLUMBER'S GOODS

Per cwt. Delivered in quantities of	3½ lb. lead and upwards	Lead pipes in coil	Lead soil pipes	Allowance for old lead
2 Tons	147/6	148/6	151/6	100/–

IRON SOIL AND WASTE PIPE—

	2 in.	2½ in.	3 in.	3½ in.	4 in.
L.C.C. coated (M) per yard	3/1⅜	3/4	3/8⅜	4/2¼	4/9¼
Bends each	2/3¾	2/6¾	2/9¾	3/6	3/11¼
Swannecks, 4½″ projection, do.	2/9¾	3/3	4/5½	5/1½	5/11¼
Do. 9 in. do.	3/9	4/2½	5/1½	5/11½	7/–
Junctions do.	2/9¾	3/6	4/2½	4/10½	5/7½
Round access doors do.	5/3	5/3	5/3	5/7½	5/7½

The above prices plus 75% added to foot of invoice.

GALVANIZED CISTERNS—

(Less than four)		100	200	300	gallons
Angle iron at top and corner plates	14 gauge	121/–	212/6	296/–	do.
	12 do.	145/–	233/6	317/6	do.
	¼″ plate	170/6	265/6	366/–	do.
HOT WATER TANKS—		25	30	50	
Riveted, with ring	12 gauge	93/–	102/–	141/6	
	⅜″ plate	102/–	110/6	157/–	
CYLINDERS		25	37	48	
Riveted and handhole	12 gauge	125/8	139/8	159/5	
	⅜″ plate	138/9	155/11	178/6	

PLUMBERS' BRASSWORK—

(Good Quality)	½in.	¾in.	1in.	Each 1¼in.	1½in.	2in.
Ball valve, equilibrium, M.W.B. pattern, with union, copper ball	19/9	26/10	38/3	66/–	97/3	162/–
Do., Croydon, M.O.H. pattern, low pressure	10/3	15/1	25/–	44/6	54/9	91/–
Bib valve, polished brass, crutch top, S.D. for iron	5/9	8/3	15/3	–	–	–
Do., chromium plated, easy clean, spoke top, lettered	9/–	13/–	20/–	–	–	–
Elbow back plate for tap: in brass	6/–	8/6	–	–	–	–
chromium plated	7/–	10/–	–	–	–	–
Do. brass with union for lead	8/6	12/–	–	–	–	–
Do., but chromium plated	12/–	14/–	–	–	–	–
Stop valve, brass, screw down crutch top, for iron	5/9	8/–	12/–	24/6	36/6	62/9
Do. but unions for lead	8/3	11/–	17/6	32/6	48/6	83/6
Gun metal wheel valves	8/3	10/9	13/–	17/6	22/6	33/–
Waste outlet, washer, plug, chain stay and union	–	–	–	6/–	7/3	13/–
Boiler screw, brass, double nuts	1/9	2/2	3/8	5/6	8/6	–
Plumbers' union, brass, lead to iron	2/6	3/6	5/3	7/9	9/6	17/6
Inspection cap and screw, brass	–	–	1/6	1/9	2/–	3/–

	1½ in.	1½ in.	2 in.	3 in.	4 in.
Brass tail pieces, 4″ long	–	1/11	2/3	4/5	6/6
Do. 6″ long	–	3/3	4/8	6/4	9/4
Brass thimble	–	2/6	3/–	5/–	6/3
Double lead tacks	1/4	1/6	1/9	4/8	7/–
Lead, 7 lb. P traps, 1½″ seal	6/4	8/4	11/6	–	–
Lead, S do., as last	7/8	10/1	14/1	–	–
Galvanized wire guards	–	–	1/6	1/7	1/8
Copper do.	–	–	2/4	2/6	2/8

Solder: Plumber's 3/8 lb.; Blowpipe 4/6 lb.
Pipe lagging, 24 feet×4 in. 4/6 per roll
Boss white jointing compound 2/– 1 lb. tin
Gaskin, 1/7 lb. Long dressed hemp, 2/– per ½ lb. hank.

COPPER TUBES—Extract from B.S. 659/1944—
Internal work (semi hard). 3 Cwt. lots.

Nominal bore.	Outside diameter inch.	Gauge.	Weight lb. per ft.	Price per lb. pence.	Price per ft. pence.
⅛ in.	0·596	19	0·27	36½	9·79
¼ in.	0·846	19	0·39	35	13·65
1 in.	1·112	18	0·62	33¾	21·03
1¼ in.	1·362	18	0·76	33¼	25·27
1½ in.	1·612	18	0·91	33¼	30·26
2 in.	2·128	17	1·40	34½	48·30

CAPILLARY TYPE CONNECTIONS—copper to copper

Each	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Straight	1/8	2/4½	3/9½	4/11½	6/8	9/7
Bends	4/5½	5/5½	7/10½	10/9½	16/11	23/9
Tees	4/1½	4/9½	7/8½	11/3½	16/0½	23/9
Brackets (Brass)	2/3	2/7	3/–	3/2	3/7¼	4/8

GLASS

English flat drawn Sheet Glass in squares, cut to size over 250 super feet.	Ordinary Glazing Quality
24 oz., do.	5½d.
26 oz., do.	7½d.
32 oz., do.	9½d.

Prices shown for Figured, Rolled and Cathedral, Rolled and Wired and Prismatic apply to quantities over 500 feet super.

Figured, Rolled and Cathedral glass, cut to size, per foot super: White 7½d. Tinted 10½d.

Prismatic glass, cut to size 1/2½ per foot super

Rolled and wired glass, cut to size, per foot super:

⅛″ Rolled	7½d.
3/16″ or ¼″ do.	8½d.
3/16″ or ¼″ Rough cast	8½d.
¼″ Wired, rolled or cast	9½d.
Georgian wired cast	10½d.
¼″ Wired arctic	1/8
Fluted (No. 4)	1/–
Feathered	1/–

POLISHED PLATE GLASS, cut to sizes, ordinary substance approximately ¼ in. (Tariff)

Per foot super.	General Glazing	Selected Glazing Quality	Silvering Quality
In plates not exceeding			
12 feet super in each	2/8	2/10	3/4
3 feet do.	3/–	3/5	4/1
5 feet do.	3/2	3/10	4/7
45 feet do	3/9	4/1	5/7
100 feet do.	4/5	5/7	7/2

Extra sizes, i.e., plates exceeding 100 feet super in each, or 160 inches long, or 96 inches wide, at higher prices.

PAINTS AND VARNISH

	Price	Unit
Aluminium	35/9	Gallon
Dryers	24/–	Gallon
Distemper, washable (best)	90/–	Cwt.
Enamel, best white	57/–	Gallon
Knotting	27/6	Gallon
Gold Paint	86/6	Gallon
White Lead	162/6	Cwt.
Linseed Oil, boiled (5 gallon lots)	16/11	Gallon
Do. raw (do.)	16/6	Gallon
Mixed Paint (white lead)	52/6	Gallon
Putty	49/9	Cwt.
Size	8/–	Firkin
Tar	2/–	Gallon
Terebine	18/–	Gallon
Japan	21/6	Gallon
Varnish, hard oak	33/6	Gallon
Do. copal	34/–	Gallon
Do. flat	34/–	Gallon
Whiting Gilders	9/–	Cwt.
Petrifying liquid	6/6	Gallon
Solignum	8/–	Gallon
Creosote	2/–	Gallon
Ceiling Distemper	32/–	Cwt.
Turpentine substitute	4/7½	Gallon
Bitumen Solution	5/–	Gallon
Paperhangers' Paste	32/–	Cwt.

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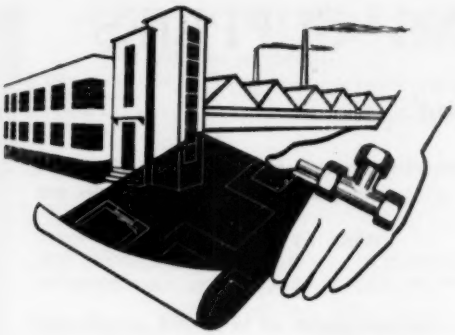

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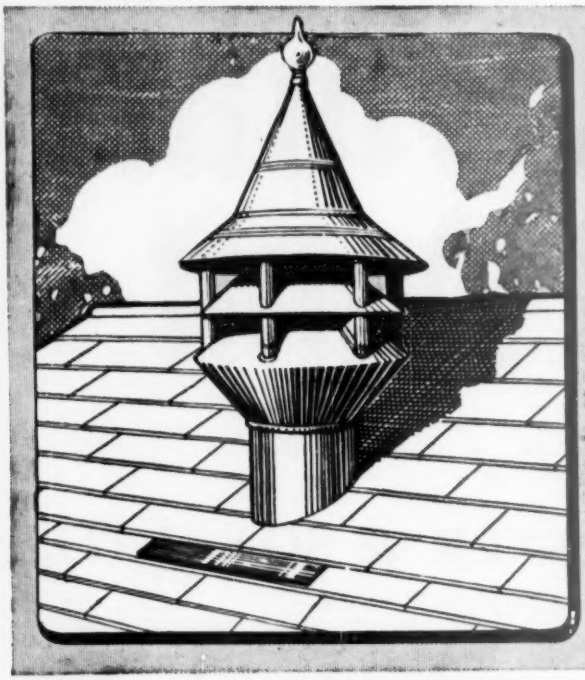

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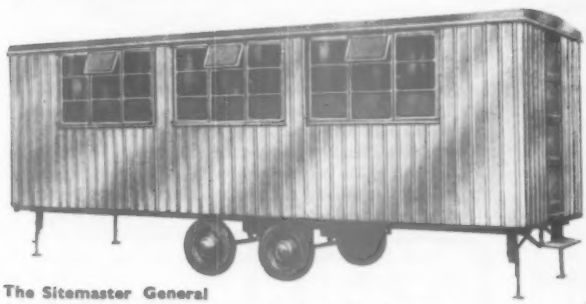

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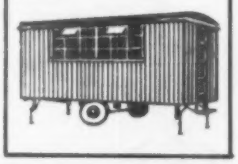

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Height 6ft. 6ins.
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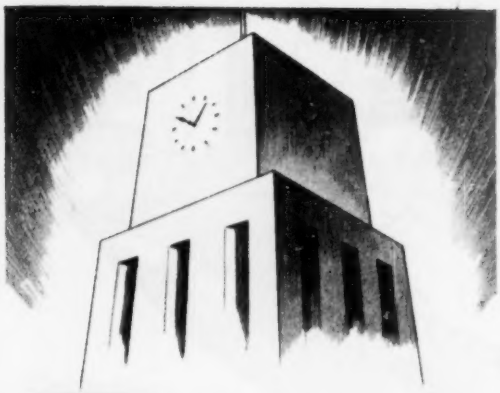

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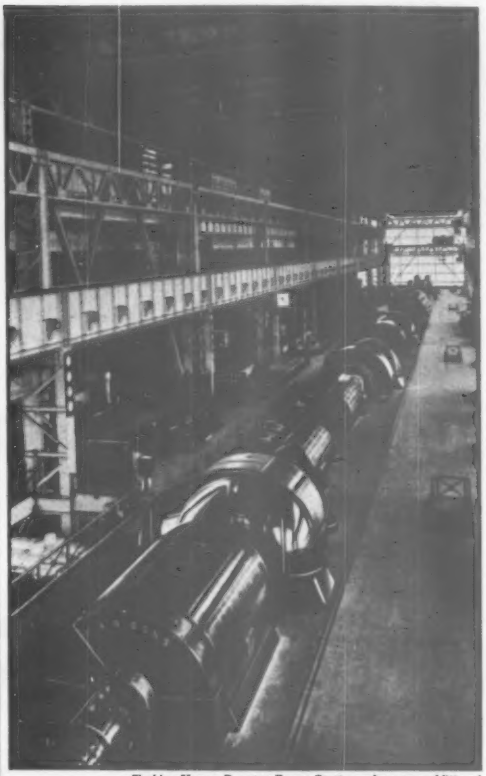

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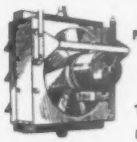

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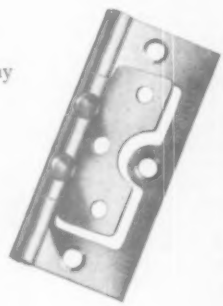

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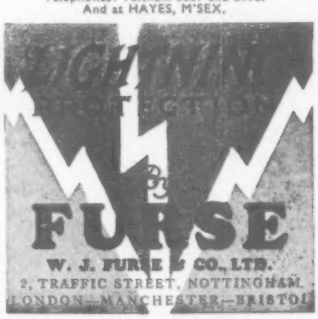

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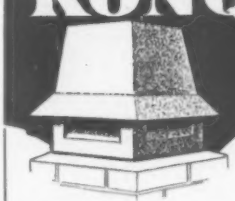

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OFFICIAL ANNOUNCEMENTS

LANCASHIRE COUNTY COUNCIL.

COUNTY PLANNING DEPARTMENT.

ESTATE DEVELOPMENT—SENIOR ARCHITECTURAL ASSISTANT.

The County Council has set up an Estate Development Section at the Headquarters Office of the Department in Preston, to carry out, in co-operation with County District Councils, comprehensive schemes for the accommodation of overspill population from congested urban areas by the development of existing townships.

Applications are invited from qualified Architects, preferably with housing experience. Duties include the preparation of layouts for housing and ancillary purposes, landscaping and the co-ordination of building design. Salary A.P.T. Grade VI—£595-£660.

SENIOR PLANNING ASSISTANTS (ARCHITECTURAL).

Applications are invited from qualified Architects for vacancies at the Preston (Headquarters), Lancaster, Accrington, Liverpool, Wigan and Manchester Offices of the Department. Salary A.P.T. Grade VI, £595-£660.

Duties will be mainly concerned with design and include the preparation of detailed layouts for housing schemes, village extensions and central area improvements.

DEPUTY DIVISIONAL PLANNING OFFICER.

Applications are invited for the above post in the Accrington Divisional Planning Office. Salary A.P.T. Grade VIII, £685-£760.

Candidates for this appointment should possess one or more of the following or equivalent qualifications:—

A University Degree or Diploma in Architecture, Engineering or Surveying; A.M.T.P.I., A.M.I.C.E., A.R.I.C.S., A.M.I.Mun.E., A.R.I.B.A.

Candidates should have had considerable experience in the preparation of Surveys and Town Maps in the form required by the Town and Country Planning Act, 1947, and be experienced in the administration of development control.

Applications, giving the names, addresses and qualifications of two referees (where possible one should be the present employer) and stating for which appointment application is made, should reach the County Planning Officer, County Offices, Preston, by 28th October, 1950. [4886

COUNTY BOROUGH OF GRIMSBY.

APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

APPLICATIONS are invited for the following appointments in the Architectural Section of the Borough Engineer and Surveyor's Department:—

(a) ARCHITECTURAL ASSISTANT, Grade A.P.T. VII. Salary £635-25-710 per annum.

(b) ARCHITECTURAL ASSISTANT. Grade A.P.T. III. Salary £450-15-495 per annum.

Married applicants should state if they require the Corporation to provide suitable housing accommodation.

In the case of appointment (a), preference will be given to candidates with experience in new schools and other important public buildings, whilst for appointment (b) experience on housing schemes and other general building work is desirable.

The appointments are terminable by one month's notice on either side and also subject to the provisions of the Local Government Superannuation Act, 1937. The successful candidates will be required to pass a medical examination.

Applications, stating age, whether married or single, qualifications, and details of training and experience, together with copies of two recent testimonials, to be delivered to the undersigned not later than Friday the 27th October, 1950.

J. V. OLDFIELD,
Borough Engineer and Surveyor.

Municipal Offices,
Town Hall Square, Grimsby.
October, 1950. [4879

LONDON COUNTY COUNCIL.

APPLICATIONS are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats) and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816). [4010

MINISTRY OF WORKS.

THERE are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS and LEADING ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, and Housing.

Salary: Architectural Assistants £300-£525 per annum. Leading Architectural Assistants £500-£625 per annum. Starting pay will be assessed according to age, qualifications and experience. These rates are for London; a small deduction is made in the Provinces.

Although these are not established posts, some of them have long term possibilities and competitions are held periodically to fill established vacancies.

Appy in writing, stating age, nationality, full details of experience, and locality preferred, to Chief Architect, W.G.10/BC, Ministry of Works, Abell House, London, S.W.1, quoting reference W.G.10/BC. [4671

LONDON COUNTY COUNCIL.

ARCHITECT'S DEPARTMENT.

APPLICATIONS are invited for positions of ARCHITECT, Grade III (£550-£700) and TECHNICAL ASSISTANT (up to £580) for work on new housing schools and other public buildings. The positions are superannuable. Candidates for Grade III positions should possess professional qualifications.—Application forms from the Architect (AR/P/S), The County Hall, Westminster Bridge, S.E.1, enclosing stamped addressed foolscap envelope. Canvassing disqualifies. (384). [0097

BOROUGH OF WILLESDEN.

APPOINTMENT OF ARCHITECTURAL ASSISTANT.

THE Council invite applications for the appointment of an ARCHITECTURAL ASSISTANT on the Permanent Staff of the Borough Engineer and Surveyor's Department.

The salary attaching to the post will be Administrative Professional and Technical Grade VI of the National Whitley Council's Scale for the London Area, namely £595 per annum rising by two annual increments of £20 per annum and one of £25 per annum to £660 per annum, plus London Weighting of £30 per annum.

Candidates must be Associates of the Royal Institute of British Architects or hold an equivalent qualification, and preferably have general knowledge and experience of architectural work in the service of a local authority.

The appointment will be terminable by one month's notice on either side, is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications, giving age, experience, etc., accompanied by copies of not more than three testimonials, should be addressed to the undersigned, endorsed "Architectural Assistant," not later than 10 a.m. on Monday, 23rd October, 1950.

It will be necessary for the successful candidate to provide his own housing accommodation as the Council is not in a position to assist.

Canvassing, directly or indirectly, will be deemed a disqualification.

(Signed) R. S. FORSTER, Town Clerk.
Town Hall, Dyne Road,
Kilburn, N.W.6.
15th September, 1950. [4841

CARDIGANSHIRE COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT, ABERAYRON.

APPLICATIONS are invited for the following appointments:—

ONE QUANTITY SURVEYOR. Salary A.P.T. Grade VIII (£685-£760).

Applicants should be thoroughly experienced in the preparation of Estimates, Bills of Quantities, Interim Valuations and Final Accounts for all types of buildings, and should be Associates of the R.I.C.S.

The commencing salary will be fixed in accordance with the successful candidate's experience.

TWO ASSISTANT ARCHITECTS. Salary A.P.T. Grade VI (£595-£660).

Applicants should be Members of the Royal Institute of British Architects, with experience in the design and construction of modern buildings (particularly schools), the supervision of large contracts, and other works carried out by Local Authorities.

ONE ASSISTANT ARCHITECT. Salary A.P.T. Grade V (£520-£570).

Applicants should be experienced in the design and construction of post-war schools and preference will be given to candidates with R.I.B.A. qualifications.

ONE ARCHITECTURAL ASSISTANT. Salary A.P.T. Grade III-IV (£450-£525).

Applicants should preferably have passed the Intermediate Examination of the R.I.B.A. and should have a good general experience in architectural work.

The commencing salary will be fixed in accordance with the successful candidate's training and experience.

All the above appointments will be subject to one month's notice on either side, and to the provisions of the Local Government Superannuation Act, 1937.

Successful applicants will be required to pass a medical examination.

APPLICATIONS.

Applications, suitably endorsed, stating age, qualifications, details of experience, previous and present appointments, present salary, and the earliest possible date when available, together with two recent testimonials and names of two referees, are to be delivered to the undersigned on or before the 30th October, 1950.

The Council regret that they are not in a position to assist in finding living accommodation.

J. E. R. CARSON,
Clerk of the Cardiganshire County Council.
Cambrian Chambers, Aberystwyth, Cards.
30th September, 1950. [4873

GOVERNMENT OF PUNJAB, INDIA.

APPLICATIONS are invited for the post of CONSULTING ARCHITECT to the Punjab Government.

Qualifications: Candidates should be F.R.I.B.A., or A.R.I.B.A., or Registered Architects by examination, and preferably have had at least ten years' practical experience as Consulting Architect in a Government Department or private firm. Age between 30 and 45 years on 1st April, 1950.

Terms: Contract for five years in first instance (including one year's probation) terminable by six months' notice on either side. Pay in scale Rs.1,300 - 60 - 1,600 per month (approximately £1,170 to £1,440 a year) according to age, qualifications, etc., plus Dearness Allowance. Also £30 a month overseas pay for appointee of non-Asiatic domicile. Free passage. Provident Fund.

Further particulars and forms of application may be obtained, on request, by postcard quoting No. 495C from the High Commissioner of India, General Department, India House, Aldwych, London, W.C.2. Last date for receipt of applications, 6th November, 1950. [4872

APPLICATIONS are invited for following appointment in the office of the Architect, Eastern Region, British Railways, at King's Cross Station, London, N.1:—

SENIOR ARCHITECTURAL ASSISTANT. Applicants should be Registered Architects and Associates of R.I.B.A. They should be good contemporary designers and able to take responsibility for day-to-day conduct of major contracts. Salary range £600 to £630 according to qualifications and experience.

The Department is engaged on the design and construction of industrial, commercial and domestic buildings, and offers varied and interesting work.

Apply Civil Engineer, Staff Section, British Railways, King's Cross Station, N.1. [4885

BURGH OF COATBRIDGE.

TOWN PLANNING ARCHITECT.

APPLICATIONS are invited for the appointment of TOWN PLANNING ARCHITECT for the Burgh of Coatbridge. Applicants, who should be qualified Architects and also Members of the Town Planning Institute, must have executive and administrative experience and experience not only in design, preparation of working drawings, specifications and quantities for the erection of houses and offices, but more particularly experience in the preparation of Town Planning Schemes.

The successful applicant must be under 45 years of age and will be admitted to the Town Council's Superannuation Scheme subject to passing a medical examination before appointment.

The salary will be Grade VII of the A.P.T. Scale of the J.I.C. Charter, namely, £635 to £710 by annual increments of £25.

Applications, stating age, qualifications and experience, together with copies of three recent testimonials, must be lodged with the undersigned not later than fourteen days after the appearance of this advertisement.

ALEXANDER S. THOM, Town Clerk.
Municipal Buildings, Coatbridge.
3rd October, 1950. [4875

HIS MAJESTY'S COLONIAL SERVICE.

THERE are a few vacancies for ARCHITECTS in the Public Works Department, Nigeria. The appointments are on contract at a salary of up to £1,450 per annum, according to qualifications, experience and war service. Candidates should possess the professional qualifications and preference will be given to those having experience in the design of modern school and hospital buildings. A cost of living allowance ranging from £60 to £110 per annum is payable in addition.

The terms of service include an outfit allowance of £60 on first appointment, free first class passages once each way each tour for the officer and, if married, for his wife and up to two children, free medical attention and home leave on full pay at the rate of 7 days for each month of resident service. Furnished quarters are provided at a rent ranging from £75 to £150 per annum is charged. Income Tax is payable at low West African rates only. A gratuity of £25 for each period of three months' service is payable on satisfactory completion of the contract.

Applicants should write at once to the Director of Recruitment, Sanctuary Buildings, Great Smith Street, S.W.1, stating age, professional qualifications and experience, and quoting the reference No. 27301/38. [4876

LONDON COUNTY COUNCIL.

BRIXTON SCHOOL OF BUILDING.

REQUIRED as soon as possible:—

(a) SENIOR ASSISTANT to teach quantities and analysis of builders prices. Applicants should be Associates or Fellows of the R.I.C.S. and have had professional experience as Quantity Surveyors. Salary £766 x £25 - £878.

(b) LECTURER to teach building construction. Applicants must be suitably qualified and have experience of industry or professional practice. Teaching experience is a recommendation. Burnham Scale salary. An allowance over the scale will be considered in connection with this post, giving maximum basic salary £678 per annum (allowances for qualification and training additional).

Application forms (stamped addressed envelope necessary) from the Secretary at the School, Ferndale Road, S.W.4, returnable by 11th November (1274). [4871

SKIPTON URBAN DISTRICT COUNCIL.

ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the above appointment. Salary within A.P.T. Va-VI of the National Scales (£550-£660).

Housing accommodation will be available if required.

Although the position is not in the permanent establishment, it is anticipated that the appointment will continue for at least three years. It will be subject to one month's notice on either side, and to the passing of a medical examination for superannuation purposes.

Applications, stating age, qualifications, and experience, and the names and addresses of three referees, to be sent to Mr. K. B. Robinson, B.Sc.(Eng.), A.M.Inst.C.E., Engineer and Surveyor, Town Hall, Skipton, by first post, Monday, 23rd October, 1950.

L. E. SMITH, Clerk to the Council. [4880

METROPOLITAN BOROUGH OF HACKNEY.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

ARCHITECTURAL SECTION.

APPLICATIONS are invited for the undermentioned permanent appointments at salaries in accordance with the scales indicated. In each case the commencing salary may be fixed at a point above the minimum of the Grade specified, according to the qualifications and experience of the successful candidates.

ARCHITECTURAL ASSISTANT.

Two appointments, Grades A.P.T. III-IV (£450 p.a. - £525 p.a., plus London Weighting Allowance). Candidates must have had a good architectural training, and must have passed the R.I.B.A. Intermediate or equivalent examination.

ARCHITECTURAL DRAUGHTSMAN.

One appointment, Grade A.P.T. I (£390 p.a. - £435 p.a. plus London Weighting allowance). Candidates must have had a good technical education and must be neat and expeditious architectural draughtsmen, with a sound knowledge of building construction.

Conditions of appointment and application form may be obtained from the undersigned upon receipt of a stamped addressed foolscap envelope.

Completed application forms, endorsed with the designation and Grade of the post applied for, must be returned not later than first post on 20th October, 1950. The Council is unable to provide housing accommodation.

DUDLEY SORRELL, Town Clerk.
Town Hall, Hackney, E.8.
29th September, 1950. [4874

ARCHITECTURAL APPOINTMENTS VACANT

ARCHITECTURAL Assistant required for West End office. Salary £650 per annum. Five-day week.—Apply, giving details of qualifications and experience, Box 6675, The Architect and Building News. [4877

LONDON Firm of Architects with offices in West End require Senior Assistants and Junior Assistants up to Intermediate standard. The work is of a varied nature. Salary by arrangement.—Box 6693, The Architect and Building News. [4884

SITUATIONS VACANT

ARCHITECTURAL Metal Workers require a Designer-Draughtsman of considerable merit. Top salaried position for skilled man.—Apply The Morris Singer Company, Hope House, Gt. Peter Street, Westminster, S.W.1. [4095

ARCHITECTURAL Draughtsman required with an experience of factory design.—Applications to be sent together with full details of experience and salary required to Box A.N. 273, at 191 Gresham House, E.C.2. [4840

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TENDERS are invited for the erection of a NEW SPECIAL SCHOOL at Whitley Abbey Estate.

Contractors wishing to tender should make application to reach the undersigned not later than the 25th October, 1950, and enclose a cheque for £3 3s. 0d. made payable to "Corporation of Coventry." Deposits will be refunded on receipt by the due date of a bona-fide tender or notification of inability to tender.

Bills of Quantities, etc., will be issued on or about 3rd November.

Sealed tenders in the envelopes provided should be sent to the Architects, Loveday & Davis A.A.R.I.B.A., 2a Lawrence Sheriff Street, Rugby, to arrive not later than 10 a.m. on Saturday, 25th November, 1950. Tenders which do not comply with this condition will be disqualified.

The lowest, or any, tender will not necessarily be accepted, and contractors tendering do so at their own expense.

W. L. CHINN, M.A., Director of Education.
The Council House, Coventry.
5th October, 1950. [4878

CONTRACTS

BOROUGH OF GILLINGHAM.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

FEATHERBY ROAD INFANTS' SCHOOL.

SUPPLY AND ERECTION OF STEELWORK.

TENDERS are invited for the supply and erection of Steel Stanchions, Beams and Roof Trusses in an infants' school for 360 pupils off Featherby Road, Gillingham, Kent.

Copies of the Specification, Drawings and Form of Tender may be obtained and the Conditions of Contract inspected on application to the Borough Engineer and Surveyor, Municipal Buildings, Gillingham, Kent, on or after 28th October, 1950.

Applications should be accompanied by a cheque for £3 3s. 0d. (three guineas) made payable to the Gillingham Corporation. This sum will be refunded on the receipt of a bona-fide tender not subsequently withdrawn and on the return of all documents issued.

Tenders on the forms provided and sealed in the envelopes provided must be received by the undersigned by not later than Tuesday, 14 November, 1950.

The Corporation do not bind themselves to accept the lowest or any tender.

J. C. NELSON, Town Clerk.
Municipal Buildings, Gillingham, Kent.
6th October, 1950. [4881

BOROUGH OF GILLINGHAM.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

FEATHERBY ROAD INFANTS' SCHOOL.

TENDERS are invited for the erection of a ONE-STOREY BRICK-BUILT SCHOOL for 360 infants off Featherby Road, Gillingham, Kent.

Copies of the Specification, Bill of Quantities and Form of Tender may be obtained and the Drawings and Conditions of Contract inspected on application to the Borough Engineer and Surveyor, Municipal Buildings, Gillingham, Kent.

Applications should be accompanied by a cheque for £5 5s. 0d. (five guineas) made payable to the Gillingham Corporation. This sum will be refunded on the receipt of a bona-fide tender not subsequently withdrawn and on the return of all documents issued.

Tenders on the forms provided and sealed in the envelopes provided must be received by the undersigned by not later than Tuesday, 14th November, 1950.

The Corporation do not bind themselves to accept the lowest or any tender.

J. C. NELSON, Town Clerk.
Municipal Buildings, Gillingham, Kent.
6th October, 1950. [4882

BOROUGH OF GILLINGHAM.

BOROUGH ENGINEER AND SURVEYOR'S DEPARTMENT.

FEATHERBY ROAD INFANTS' SCHOOL.
HEATING INSTALLATION.

TENDERS are invited for the installation of a low pressure hot water heating system operated by coal-fired boilers in an infants' school for 360 pupils off Featherby Road, Gillingham, Kent.

Copies of the Specification, Drawings and Form of Tender may be obtained and the Conditions of Contract inspected on application to the Borough Engineer and Surveyor, Municipal Buildings, Gillingham, Kent, on or after 28th October, 1950.

Applications should be accompanied by a cheque for £3 3s. 0d. (three guineas) made payable to the Gillingham Corporation. This sum will be refunded on the receipt of a bona-fide tender not subsequently withdrawn and on the return of all documents issued.

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